

# BULLETIN OF MISCELLANEOUS INFORMATION No. 10 1928 ROYAL BOTANIC GARDENS, KEW

## LV.—DISCOVERY OF THE GENUS *COOPERIA* IN PERU. T. A. SPRAGUE.

Bulbs of an amaryllidaceous plant received from Mollendo in southern Peru by Major Albert Pam of Wormley Bury, Broxbourne, Herts, were presented by him to the Royal Botanic Gardens in August, 1928. At the time of writing (Sept. 14th) two plants have just flowered and have been identified as belonging to the genus *Cooperia* (Prairie Lily). This has hitherto been supposed to be confined to North America, only three species being known, namely, *C. Drummondii* Herb., found on prairies in Texas and New Mexico and the adjacent parts of Mexico, *C. pedunculata* Herb., a native of Texas, and *C. miradorensis* Kränzlin, from Mexico (Vera Cruz). The last species, however, may possibly, according to Kränzlin, be only a small form of *C. pedunculata*.

As it seemed not improbable that this Peruvian *Cooperia* might have been described as a species of some allied genus, search was made amongst the herbarium specimens and descriptions of *Zephyranthes*, with the result that it was identified with a species from Ylo in southern Peru, described and figured in 1725 by Feuillée under the phrase-name, *Lilio-Narcissus, flore albicante, tubo praelongo* (Journ. Obs. Phys. iii., Hist. Pl. Med. 29, t. 20, fig. sinistra). This description and figure form the sole basis of *Pyrolirion albicans* Herb. (Amaryllidaceae, 184: 1837). Herbert included *P. albicans* doubtfully in *Pyrolirion*, with the following remarks: "This plant, from Ylo in Peru, is only known to us by Feuillet's [sic] description and bad plate, with a whitish tubular flower, and limb reflex at the point; it agrees with no genus but *Pyrolirion*. There is no spathe in the figure. It is impossible to be quite certain that this plant may not be a *Cooperia*; but both the leaves and the reflex points of the limb seem to correspond with those of *Pyrolirion*." Baker, Handb. Amaryllid. 30 (1888), treated *Pyrolirion* as a subgenus of *Zephyranthes*, and gave the name *Zephyranthes albicans* to *P. albicans*.

There can be no question that Major Pam's plants and Feuillée's figure are congeneric. The long slender cylindrical perianth-tube, short filaments, and suberect anthers distinguish them both from *Pyrolirion* and *Zephyranthes*, and are characteristic of *Cooperia*. The fact that they differ from the previously known species of *Cooperia* in having reflexed perianth-lobes does not seem a sufficient reason for excluding them from that genus.

In the writer's opinion the two are also conspecific. The following differences, have however, been observed.

*Feuillée*: perianth-lobes very acute, 10-12 mm. broad; style considerably exceeding the stamens.

*Pam*: perianth-lobes obtuse with a small apiculus, 15–18 mm. broad; style slightly exceeding the stamens.

The differences in breadth of perianth-lobes and length of style seem to be rather discounted by the fact that a flower from another bulb of the same batch sent by Major Pam to Sir William Lawrence, Bt., of Burford, Dorking, has the perianth lobes only 12–13 mm. broad, and the style considerably exceeding the stamens, in these respects agreeing more closely with Feuillée's figure. On the other hand the flowers of two of the bulbs received direct from Major Pam have anthers about 3 mm. long and easily visible filaments, agreeing in these characteristics with the figure, whereas the flower received from Sir William Lawrence has anthers of two sizes, respectively 6 mm. and 4 mm. long, which at first sight appear to be sessile, as they completely hide the very short filaments.

The precise importance which should be assigned to the various differences noted above cannot be determined until more is known about the limits of variation in the species under consideration. It seems significant, however, that according to Small (Fl. South-eastern United States, ed. 2, 290: 1913), the perianth-lobes of *Cooperia Drummondii* exhibit considerable variation both in shape and size. It is desirable that an attempt should be made to obtain bulbs of *Cooperia* from Feuillée's locality, Ylo, in order that they may be compared with the Mollendo plants. These two localities are, however, not far apart (Ylo 17° 40' S., 71° 22' W.; Mollendo 17° 5' S., 72° 2' W.), and are in the same phytogeographical region.

In the meantime, the new name *Cooperia albicans* is proposed for *Pyrolirion albicans* Herb. (*Zephyranthes albicans* Baker), and the bulbs from Mollendo are assigned to that species.

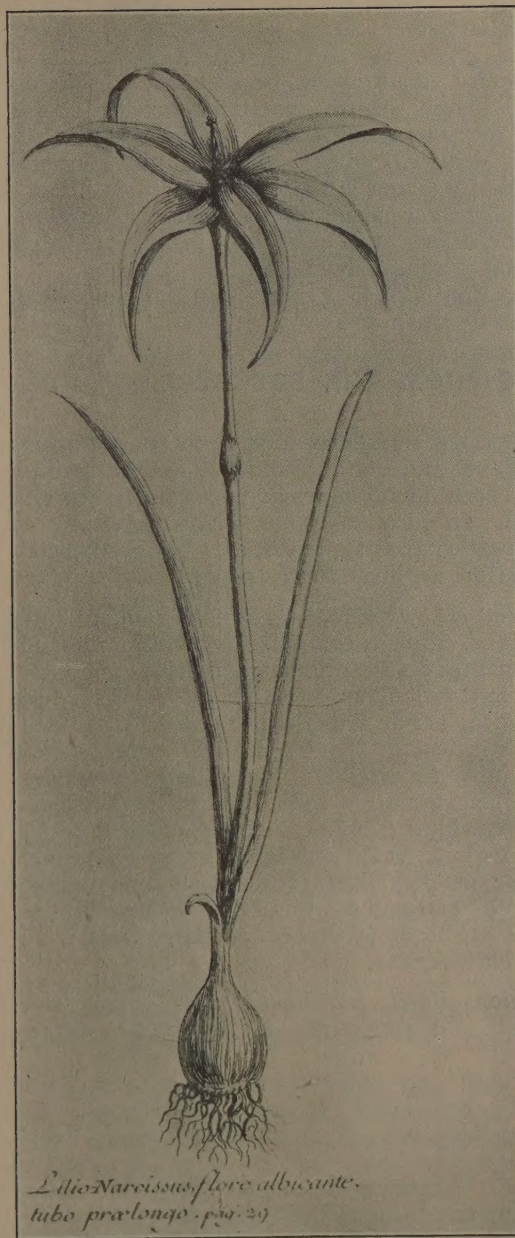
***Cooperia albicans*** (Herb.) Sprague, comb. nov. *Pyrolirion albicans* Herb. Amaryllidac. 184 (1837). *Zephyranthes albicans* Baker, Handb. Amaryllid. 38 (1888). *Lilio-Narcissus, flore albicante, tubo praelongo* Feuillée, Obs. iii., Hist. Pl. Medic. 29, t. 20, fig. sinistra (1725).

*Original description*:—"Les oignons de cette espece sont de differente grosseur, les moiens ont quinze à seize lignes de longueur, sur dix à douze lignes d'épaisseur; ils renferment une substance gommeuse, fort blanche. La tige est simple, nue, ronde, d'un beau verd, haute de sept à huit pouces, sur environ une ligne et demi d'épaisseur, elle sort d'entre trois ou quatre feuilles de sept à huit pouces de longueur, sur une ligne et demi de largeur, creusées en gouttière, d'un beau verd, et terminées en pointe. La tige soutient une seule fleur blanc de lait, sa partie postérieure est un tuyau long de deux pouces, dont le pavillon s'évase environ quatre pouces, et se découpe en six parties, longues chacune de deux pouces, sur cinq à six lignes de largeur, elles se terminent en pointe, et se courbent en dessous de cette plante.

Je trouvai cette plante dans la vallée d'Ylo, entre deux montagnes, dans un pays extrêmement sec."

PERU. Type-locality, Ylo (Ilo), south of Mollendo.





*Cooperia albicans* (Herb.) Sprague.

As the original description and figure of *C. albicans* given above are incomplete, it seems desirable to supply a new description drawn up from one of Major Pam's plants which flowered at Kew.

*Bulb* subglobose, nearly 2 cm. long and over 2 cm. in diameter, pale brown, neck less than 1 cm. long. *Leaves* oblanceolate-linear, subobtuse, 12–20 cm. long, arcuate-subrecurved towards the apex, lower part with margins more or less strongly incurved, and hence only 2.5–4 mm. broad, upper part shallowly concave, 7–8 mm. broad, rather strongly 7-ribbed, especially on the lower surface. *Scape* 7 cm. long, slightly compressed, broader diameter 4.5 mm., narrower diameter 3.5 mm. *Spathe* 4.3 cm. long, very closely investing the ovary and perianth tube, split unilaterally down to 2.7 cm. from base, free tips of its two component bracts about 8 mm. long, shrivelled at the time of flowering. *Flower* sessile in the spathe, very sweet-scented. *Perianth* white; tube cylindric,

about 7 cm. long, slightly broadened into the throat; lobes arcuate-recurved, broadly lanceolate, outer ones 4-4.5 cm. long, 1.7-1.8 cm. broad, inner ones about 4 cm. long and 1.5-1.6 cm. broad; limb when flattened horizontally about 7.5 cm. in diameter. *Filaments* with broadly depressed-deltoid, slightly united basal parts, upper parts oblong, tapered upwards, 1 mm. long, 0.7 mm. broad at the base. *Anthers* (already dehiscent) oblong, about 3 mm. long and 1 mm. broad. *Style* shortly (about 3 mm.) exceeding the anthers; stigmas suborbicular, slightly concave above, margins recurved, outline pyriform if the short style-arms are included; ovary oblong, hardly 1 cm. long, 5 mm. in diameter.

PERU. Hills above Mollendo, in almost pure volcanic sand. Vernacular name: "flor de amancaes."

## LVI.—NEW PLANTS FROM THE SEYCHELLES.

V. S. SUMMERHAYES.

In the course of preparing an enumeration of the phanerogams of the Seychelles a new genus and a number of new species have been detected. It has also been found necessary to transfer certain species to other genera. In addition it has seemed advisable to revive an old genus for a rather anomalous species. The descriptions and changes of nomenclature are given in this paper.

**Neowormia** *Hutchinson et Summerhayes*, genus novum, inter familiam floribus racemosis, carpellis connatis, antherarum marginibus undulatis longitudinaliter dehiscentibus valde distinctum.

Arbor, ligno molli, innovationibus dense sericeo-villosis; folia alterna, petiolata, elliptica, nervis lateralibus numerosis parallelis prominentibus, juniora denticulata et interdum fere glabra, adulta integra et plerumque infra tomentella; petioli lobis lateralibus stipulaeformibus deciduis muniti; inflorescentia oppositifolia, racemosa, ubique molliter villosa; bracteae mox deciduae; sepala ab exterioribus gradatim majora, valde imbricata, extra marginibus exceptis appresse villosa; petala 5, libera, tenuia; stamina numerosissima, libera, antheris marginibus undulatis longitudinaliter dehiscentibus; carpella 10, usque ad apicem connata, stylis subulatis liberis patulis; ovula biseriata.

**Neowormia ferruginea** *Hutch. et Summerhayes*, comb. nov. *Wormia ferruginea* Baill. *Adansonia*, vi. 268 (1865-66); Baker, *Fl. Maur. Seych.* 2 (1877).

Known as "Bois rouge" on account of the deep red young leaves, and one of the commonest trees in the islands. The remarkable cupular sheathing base of the leaves of young specimens or of young shoots has been commented on by Percival Wright and by Schimper. Schimper notes that even after several weeks' drought these cupular bases of the leaves were brimful of water. Horne (mss.) states that the leaves of a healthy young plant and of suckers are often 3 ft. long, rough and jagged on the margin.



In attempting to discover the most nearly related species of *Wormia* to *W. ferruginea* Baill. from the Seychelles we were unable to find a close ally. This led us to re-examine the flowers more closely, with the result that the ovary was found to be completely syncarpous, a character which agrees better with the genus *Dillenia* than with *Wormia*. But it differs from *Dillenia* in having a long, racemose, leaf-opposed inflorescence. We therefore propose to make it the type of a new genus, *Neowormia*, in reference to its more advanced gynaeceum. The following key summarises the differences between these three genera :—

Carpels free or slightly united at the base ; flowers in leaf-opposed or terminal racemes ; anthers straight, opening by apical pores *Wormia*

Carpels united ; flowers in leaf-opposed [or terminal ?] racemes ; anthers with *undulate* margins, opening by longitudinal slits.

*Neowormia*

Carpels more or less united ; flowers solitary, fasciculate or rarely in very short few-flowered spreading cymes ; anthers opening by pores or slits. *Dillenia*

**Vateriopsis seychellarum** Heim. *Vateria seychellarum* Dyer in Baker. Fl. Maur. Seych. 526.

A re-examination of this plant has led me to accept Heim's genus, which is intermediate in character between *Vateria* and *Stemonoporus*. The Seychelles species has the indefinite stamens of *Vateria* and these dehisce by longitudinal slits, but the connective is only produced a short distance above the anthers. However the inflorescence, which is paniculate in *Vateria* and shortly racemose in *Vateriopsis*, and the absence of any scaly indumentum in *Vateriopsis* distinguishes the latter easily from the Indian genus. Indeed, as pointed out by Dyer, the Seychelles species resembles *Stemonoporus Wightii* (*Vateria ceylanica*) extremely closely in appearance, and is probably more closely allied to this plant than to the genus *Vateria*, but differs in the stamens. The absence of a reflexed fruiting calyx in *Vateriopsis* separates it from both genera.

**Smythea lanceata** Summerhayes, comb. nov. *Ventilago lanceata* Tulasne in Ann. Sci. Nat. Sér. 4. viii. 121 (1857). *Smythea Dupontii* Hemsl. in Journ. Bot. liv. suppl. II. 9 (1916). *S. pacifica* Seem. Fl. Vit. 41 (1865).

There seems no doubt from the description that Tulasne's species is identical with the other two species cited, and indeed it would be difficult to imagine what other plant could have been intended by Tulasne.

**Allophylus Gardineri** Summerhayes, sp. nov. ; affinis *A. chartaceo* Radlk. et *A. Pervillei* Blume, ab illo foliis multo minoribus, ab hoc foliis chartaceis subcaudatis satis distinguenda.

*Arbor* fruticosa, ramulis subflexuosis teretibus glabris longitudinaliter striatis caticicibus prominentibus foliorum delapsorum notatis. *Folia* petiolata, unifoliolata, elliptica vel obovato-elliptica, apice breviter caudata, basi cuneata, in petiolulum sensim decurrentia, 6-15 cm. longa, 3-6.5 cm. lata, margine supra medium remote denticulata, chartacea, utrinque glabra, subnitida, costa ut venis supra prominula subtus prominente, venis secundariis utrinsecus 7-9 leviter curvatis subtus in axillis pilis albidis instructis; petiolus subteres, 6-18 mm. longus, glaber; petiolulus usque ad 4 mm. longus. *Thyrsi* solitarii, simplices, foliis breviores, breviter pedunculati, 6.5-9 cm. longi, ramis brevibus usque ad 5-floris. *Flores* ♂ subglobosi, 1.5 mm. diametro. *Sepala* 4, exteriora valde concava, elliptica, interiora orbicularia vel transverse elliptica, omnia 1.3 mm. longa. *Petala* anguste flabellata, ungue brevi lato, circiter 1 mm. longa, intus supra unguem squama latissima biloba longe barbata instructa, extra glabra. *Stamina* 8, breviter exserta; filamenta lineari-filiformia; thecae antherarum oblongae, 0.5 mm. longae. *Flores* ♀ et fructus non visi.

SILHOUETTE. Shrubby tree, 1908, *Gardiner* 5 (in part).

***Allophylus sechellensis*** *Summerhayes*, sp. nov.; *A. africanae* P. Beauv. similis sed thyrsis simplicibus facile distinguenda. *Schmidelia racemosa* Baker, Fl. Maur. Seych. 57, quoad specimen seychellarum.

*Arbor* fruticosa vel frutex; \*ramuli teretes, vel rarius longitudinaliter lateque sulcati, juventute pilis sericeis adpressis flavidis subdense vestiti, demum glabri, lenticellis pallide brunneis notati. *Folia* satis longe petiolata, trifoliolata; petiolus supra leviter compressus, 1.5-5.5 cm. longus, juventute praesertim superne flavide pubescens, demum fere glaber; foliola ovata vel rhomboideo-ovata, lateralibus interdum obliqua, apice acuta, basi cuneata usque ad rotundata, terminale longiuscule, lateralibus breviter vel brevissime, petiolulata, usque ad 15 cm. longa et 8 cm. lata, margine remote acute dentata, juventute utrinque subdense flavido-pilosa, demum fere glabra, axillis nervorum barbata, costa ut nervis supra prominula subtus prominente, nervis lateralibus utrinsecus 6-7 arcuatis, reticulatione subtili. *Thyrsi* solitarii, simplices, breviter pedunculati, usque ad 15 cm. longi, ramis brevissimis usque ad 5-floris. *Flores* subglobosi, 1-2 mm. pedicellati. *Sepala* 4, exteriora valde concava, elliptica, interiora orbicularia, latiora, omnia 1.5 mm. longa, ciliolata. *Petala* spathulata, 1-1.5 mm. longa, supra unguem squama bifida longe barbata instructa, intus sparse longiuscule albedo-hirsuta, extra fere glabra. *Discus* unilateralis, biglandulosus. *Flores* ♂; stamina 8, breviter exserta; filamenta anguste linearia, 1.5-2 mm. longa; thecae antherarum ellipticae, 0.5 mm. longae. *Flores* ♀; stamina inclusa, filamentis 0.5-0.75 mm. longis; ovarium bilobum, hirsutum; stylus 0.8 mm. longus, ut videtur indivisus, stigmatibus duobus divergentibus 0.5 mm. longis. *Fructus* didymus, coccis ellipsoideis 6-7 mm. longis glabris.



SILHOUETTE. Shrubby tree, 1908, *Gardiner* 5 (in part). MAHÉ. Baie Lazare, 1908, *Gardiner*; shrub growing in the bush, *Thomasset* 48. NO DEFINITE ISLAND. *Wright* (type).

***Canthium carinatum*** *Summerhayes*, comb. nov. *Plectronia carinata* Baker, Fl. Maur. Seych. 147 (1877) *P. acuminata* Baker, l.c.

Although Hemsley, when uniting Baker's two species, chose the name *P. acuminata*, on transference of the species to *Canthium* this name cannot be used owing to the earlier *C. acuminatum* D. Dietr.

***Canthium sechellense*** *Summerhayes*, nom. nov. *Plectronia celastroides* Baker, Fl. Maur. Seych. 146 (1877).

On transferring this species to *Canthium* it was found that the combination *C. celastroides* had already been made by Baillon (*Adansonia* xii. 190: 1878) for an East African plant. It is therefore necessary to give the Seychelles species a new name.

***Timonius sechellensis*** *Summerhayes*, sp. nov.; affinis *T. jambosellae* Thwaites et *T. flavescenti* Baker, a quibus foliis subtus adpresse pilosulis, stipulis elongatis extra glabris differt.

*Frutex* altus vel arbor usque ad 10 m. alta; ramuli teretes, juventute adpresse pilosuli, demum glabri, cortice brunneo vel nigrescenti-brunneo longitudinaliter ruguloso obtekti, saepius cicatricibus foliorum delapsorum notati. *Folia* breviter petiolata, elliptica vel oblongo-elliptica, rarius ovata, apice acuta vel breviter acuminata, basi cuneata, rarissime subrotundata, 5–14 cm. longa, 2.5–7 cm. lata, discoloria, supra glabra, subnitida, subtus praesertim nervis sparsiuscule vel densiuscule adpresse sericeo-pilosula, costa ut nervis supra impressa subtus prominente, nervis lateralibus utrinsecus 5–8 prope marginem arcuatim conjunctis, inter nervos laterales conspicue reticulata; petiolus supra glaber, subtus adpresse pilosus, nigrescens; stipulae elongato-lanceolatae, acutae, extra glabrae. *Flores* polygamo-dioici. *Flores* ♀ solitarii, axillares, longe (1–2 cm.) pedunculati, pedunculo apice bibracteolato; bracteolae triangulares; calyx breviter cupularis, tubo 2 mm. longo, 4-dentatus, utrinque densiuscule adpresse pubescens; corolla breviter campanulata, 4-loba, tubo 4 mm. longo, lobis patentibus oblongo-lanceolatis tubo aequilongis, extra dense adpresse sericeo-pilosa, intus glabra; stamina fauce corollae inserta, filamentis brevibus, antheris oblongo-lanceolatis 2.5 mm. longis; stylus columnaris, 9 mm. longus, adpresse pilosus, superne 5-lobus; ovarium multi-loculare, loculis uniovulatis. *Flores* ♂ in cymis 3–11-floris dispositi, breviter vel brevissime pedicellati; calyx breviter cupularis, 4-dentatus, tubo 1–1.5 mm. longo, extra adpresse sericeo-pilosus; corolla tubulosa, 4-loba, tubo 5–8 mm. longo, lobis patentibus triangulari-lanceolatis 2.5–3.5 mm. longis, extra dense adpresse sericeo-pilosa, intus glabra; stamina infra faucem corollae inserta, filamentis brevibus, antheris anguste oblongis 3.5 mm. longis; stylus fere filiformis, 3 mm. longus. *Fructus*

subsp. *obtusissime* 4-angulatus, lignosus, polypyrrenus, 7-10 mm. diametro.

**SILHOUETTE.** Common tree-shrub of glacia, 1908, *Gardiner* 10 (type). MAHÉ. Sept. 1871, *Horne* 263; 3000 ft., 1874, *Horne* 505/1; 1000 ft., 1874, *Horne* 505; Morne Blanc, *Gardiner*; Cascade Estate, common in mountains, flowers orange coloured, *Thomasset* 30. NO DEFINITE ISLAND. *Wright*; *Pervillé* 152.

Vernacular Name.—Bois cassant.

***Psychotria sechellarum*** *Summerhayes*, comb. nov. *Psathura sechellarum* Baker, Fl. Maur. Seych. 157.

This plant differs from all the other species of *Psathura* in the large terminal bracteate inflorescence and the bifid stipules. It agrees most closely in general facies with *Psychotria*, from the greater number of species of which it differs in the 5-6 locular ovary. In view of the occurrence of certain American species of *Psychotria* with 3-5-locular ovaries (these have however been included in *Palicourea* by some authorities), and the presence of bifid stipules in some species of *Psychotria*, the Seychelles plant is best placed in that genus as an aberrant form. The creation of a new genus in this tribe of Rubiaceae, previous to a critical monograph of all the genera, would only increase the confusion already present.

***Tarenna sechellensis*** *Summerhayes*, comb. nov. *Webera sechellensis* Baker, Fl. Maur. Seych. 139 (1877). *Tarenna nigrescens* Hemsl. in Journ. Bot. liv., Suppl. II, 17 (1916), quoad specimina sechellensis, non Hiern.

This differs from *T. nigrescens* Hiern in having longer and more caudate leaves while the venation is also somewhat different.

***Oldenlandia goreensis*** *Summerhayes*, comb. nov. *Hedyotis goreensis* DC. Prodr. iv. 421 (1830). *Oldenlandia trinervia* Baker, Fl. Maur. Seych. 139 (1877), non Retz.

This species, which by later authors has been considered to be conspecific with *O. trinervia* Retz., can be easily distinguished from the latter by its more robust habit and its larger and more acute leaves. It is restricted to Africa and the Mascarene Islands, whereas *O. trinervia* is a native of Indo-Malaya.

***Conopharyngia coffeoides*** *Summerhayes*, comb. nov. *Tabernaemontana coffeoides* Bojer ex DC. Prodr. viii. 370 (1844). *T. coffeaeifolia* Bojer ex Baker, Fl. Maur. Seych. 224 (1877).

***Coleus subfrutectosus*** *Summerhayes*, sp. nov.; affinis *C. lanuginoso* Hochst. et *C. cyaneo* Gurke a quibus calycis lobo posteriore aliis sesqui longiore differt.

*Herba* erecta, basi valde lignosa, caulibus e rhizomate repente simplicibus teretibus pubescentibus. *Folia* triangulari-ovata, subacuta, basi truncato-rotundata vel fere hastata, breviter petiolata, 4-5 cm. longa, 3-3.5 cm. lata, marginibus obtuse serrato-crenatis, utrinque praesertim juniora dense pubescentia. *Inflorescentia*



angustissima, nodis distantibus, floribus ut videtur fasciculatis breviuscule pedicellatis; bracteae late lanceolatae, acuminatae, cito deciduae. *Calyx* breviter tubulosus, extra albido-pilosus; lobus posterior oblongo-ellipticus, 2-3 mm. longus, acutus; lobi reliqui subulato-lineares, 1.3-2 mm. longi. *Corolla* bilabiata, labio superiore orbiculari trilobo, lobo intermedio retuso, lobis lateralibus minutis, labio inferiore oblongo-spathulato concavo. *Stamina* filamentis basi coalitis. *Fructus* non visus.

MAHÉ. Botanical Station, 10th Feb., 1913, *Dupont* 204 (type). SILHOUETTE. Grande Barbe, growing on rocks, and here and there on old cultivation, *Gardiner* 136. Vernacular name.—Gros Baume.

**Ficus** (§ Bibracteatae) **sechellarum** *Summerhayes*, sp. nov.; affinis *F. rubrae* Vahl a qua foliis majoribus oblongo-ellipticis vel oblongis apice acutatis, et *F. Thonningii* Blume a qua bracteis receptaculi minoribus, floribus masculis pedicellatis differt. *F. rubra* var. *sechellensis* Baker, Fl. Maur. Seych. 285.

*Ramuli* teretes, leviter longitudinaliter striati, glabri, cicatricibus foliorum et stipularum delapsorum notati. *Folia* oblonga vel oblongo-elliptica, rarius elliptica vel oblongo-oblancheolata, utroque angustata, apice obtuse vel late breviter acuminata, basi cuneata vel leviter rotundata, usque ad 16 cm. longa, usque ad 5.7 cm. lata, chartacea vel subcoriacea, utrinque glabra, costa ut nervis supra prominula subtus prominente, nervis lateralibus utrinsecus 8-11 a costa angulo 60° abeuntibus, nervis tertiariis crebris distinctis subquadrato-reticulatim conjunctis; petiolus supra complanatus, leviter canaliculatus, 1-4 cm. longus, glaber; stipulae subpersistentes, lanceolatae, acuminatae, glabrae, ad 2.5 cm. longae. *Receptacula* axillaria, sessilia, hermaphrodita, globosa, 5-10 mm. diametro, glabra, flavida, bracteis basalibus parvulis. *Flores* ♂ pedicellati, perianthii segmentis 3, stamino singulo. *Flores* ♀ sessiles, stylo gracili. *Flores galliferi* subsessiles.

MAHÉ. Sept. 1908, *Gardiner* (type); Mt. Harrison, *Gardiner*; common, sometimes epiphytal, May 1908, *Thomasset* 104. SILHOUETTE. *Gardiner*. NO DEFINITE ISLAND. *Wright*; May 1905, *Thomasset* 204.

*Wright's* specimen (type of *F. rubra* var. *sechellensis*) differs from the other specimens in the shape of the leaves but is almost certainly conspecific. I have changed the name to "*sechellarum*" in order to be able to cite a more complete and typical specimen as the type of the species.

**Eulophia sechellarum** *Rolfe* ms. sp. nov., characteribus generalibus *E. panduratae* Rolfe sed foliis longioribus, labello obovato-oblongo trilobato nec pandurato distincta.

*Rhizoma* repens, radicibus carnosis glabris instructum; pseudo-bulbi teretes, graciles, bifoliati, 4-7 cm. longi, usque ad 4 mm. diametro, juniores vaginis membranaceis cincti, glabri. *Folia*

longiuscule petiolata, lanceolata vel oblongo-lanceolata, acuta, basi in petiolum decurrentia, 9-11 cm. longa, 2-3 cm. lata, petiolo 3-4.5 cm. longo. *Scapus* erectus, gracilis, pauciramosus, usque ad 25 cm. longus, inferne cataphyllis remotis praeditus, apice sublae 10-20-florus; bracteae oblongo-lanceolatae, acuminatae, ovario pedicellato multo breviores, reflexae. *Flores* subpatentes, ovariis pedicellatis 10-12 mm. longis gracilibus. *Sepala* oblonga, vix spathulata, subacuta, 5-6 mm. longa, lateralia leviter falcata. *Petala* sepalis similia sed breviora et paulo latiora. *Labellum* ambitu oblongo-obovatum, superne trilobatum, 5.5 mm. longum, 4-4.5 mm. latum; lobus intermedius brevis, latus, emarginatus vel bilobulatus, calvus; lobi laterales rotundati intermedio bene breviores; calcar obtusum, apice subdilatatum, 2 mm. longum. *Columna* 3 mm. longa, subteres, antice complanata; operculum rotundatum. *Capsula* vix matura, fere 2 cm. longa.

MAHÉ. Cascade Estate, in mountain forest, 900 ft., May 1902, *Thomasset* 38 (type); Cult. Hort. Kew. Jan. 1905.

Sepals and petals yellowish-white. Lip white, with a few light streaks on the disc.

**Schoenus xipholepis** Summerhayes, comb. nov. *Cladium*? *xipholepis* Baker, Fl. Maur. Seych. 424 (1877). *Asterochaete elongata* Baker, l.c. 417, non Kunth. *Schoenus Hornei* C. B. Clarke in Dur. & Schinz, Consp. Fl. Afr. v. 657 (1895).

Examination of the original specimen of *Cladium xipholepis* shows that, in spite of its immature state, it is conspecific with *Schoenus Hornei*. C. B. Clarke has written on a label attached to the sheet "This is the young state of Baker's *Asterochaete elongata* (Fl. Maur. p. 417)", but for some reason or other did not make the correct combination when renaming Baker's plant.

**Garnotia sechellensis** Hubbard & Summerhayes, sp. nov.; affinis *G. tectorum* Hook. f. a qua culmis multinodis geniculato-adscendentibus, foliorum vaginis glabris laminis lanceolato-linearibus latioribus, panicula angustiore, gluma inferiore breviter aristata, anthoecio pallidiore differt.

*Gramen* perenne, caespitosum, usque ad 1.7 m. altum. *Culmi* geniculato-adscendentes, simplices, graciles usque moderate robusti, usque ad 4 mm. diametro, teretes, glabri, laeves, multinodi, e nodis infimis radicanter, innovationibus intravaginalibus. *Foliorum* vaginae teretes, sublaeae, internodiis saepius longiores, striatae, firme papyraceae, supra nodos pubescentes, apice villosa-pubescentes, ceterum glabrae; ligulae ad seriem ciliolum reductae, ciliis usque ad 5 mm. longis; laminae late lineares vel lanceolato-lineares, basi angustatae, apice setacea-acuminatae, usque ad 16-35 cm. longae et 2.2 cm. latae, planae, glabrae, laeves, costa distincta. *Panicula* erecta, angusta, 20-40 cm. longa; rhachis obtuse quadrangulata, glabra, striata, superne minute asperula; rami suberecti, usque ad 10 cm. longi, ramosi; pedicelli laterales usque ad 4 mm. longi. *Spiculae* lineari-lanceolatae, acutae, 5-6 mm. longae, callo piloso



instructae; glumae tenuiter chartaceae, trinerviae, nervis scabridulis; gluma inferior lanceolata (explanata), 4-4.5 mm. longa, breviter (ad 2 mm.) aristata, superior oblongo-lanceolata (explanata), acuta, 5 mm. longa; lemma lanceolatum, acutum vel brevissime aristatum, 5-6 mm. longum, firme membranaceum, trinervium; palea hyalina, linearis, 4-4.5 mm. longa, obscure binervis, marginibus ciliatis; antherae 1.5-2 mm. longae.

MAHÉ. Delanos and Pérard, at 600 m., 1912, *Dupont* (type); Morne Blanc, 1908, *Thomasset*.

The discovery in the Seychelles of a species of this otherwise Indo-Malayan and Polynesian genus is a further indication of the marked Indo-Malayan affinity of the Seychelles flora. *G. sechellensis* is most closely related to a species from Ceylon, as is often the case with Seychelles endemics. The description of *Garnotia africana* Janowski, based on a specimen collected by Chevalier near Lake Fitri, east of Lake Chad, suggested to us that it has been placed in the wrong genus. The glumes and lemma are stated to be 5-7-nerved, whereas in all the other species of *Garnotia* hitherto described the nerves vary from one to three. Also, in view of the isolated geographical position of *G. africana* it seemed unlikely to be a true *Garnotia*. Thanks to Dr. Pilger we have been able to examine the type specimen of this species, and there is no doubt that it is merely an immature specimen of a species of *Panicum*, probably *P. anabaptistum* Steud.

## LVII.—OREOCNIDE VERSUS VILLEBRUNEA.

T. A. SPRAGUE.

A list of generic names was communicated to the writer in 1927 by Dean Elmer D. Merrill, of the University of California, in order that their claims to conservation might be investigated. Among them were the names of such important genera as *Loranthus* and *Lasianthus*, the conservation of which would doubtless be welcomed by the general body of botanists. The case of the name *Villebrunea* Gaudich. is of especial interest, as its validity or non-validity under International Rules depends on the precise interpretation of Art. 38, about which there appears to be some uncertainty. Hence it seems desirable to discuss it in detail.

The generic name *Villebrunea* appeared in Gaud. Voy. Bonite, Bot., Atlas tt. 91, 92 (*Villebrunea integrifolia* Gaud. and *V. crenulata* Gaud.), the exact date of publication of which is doubtful. According to Weddell (DC. Prodr. xvi. sect. 1, 235<sup>22</sup>, footnote), however, the botanical plates of the 'Voyage de la Bonite' were published between the years 1839 and 1846, though the title-page was not issued until 1851. No descriptions of the new genera and species of Phanerogams were published by Gaudichaud, though an explanation of the plates was issued by Alleizette in 1866.

Under International Rules, Art. 37, the names of the two species, *Villebrunea integrifolia* Gaud. and *V. crenulata* Gaud. were effectively

published in Voy. Bonite, Bot., Atlas, tt. 91, 92 (1839-46), since these plates were accompanied by analyses, and are therefore equivalent to descriptions of the species.

Under Art. 38 "a genus . . . named or announced without being characterised conformably to Art. 37 cannot be regarded as effectively published," which seems to imply that the name of a genus so characterised *is* effectively published. Hence the publication of a plate, with analyses, of a *monotypic* new genus and species, such as *Philgamia hibbertioides* Baill. (Grandidier, Madag., Bot. t. 265: 1894), constitutes effective publication not only of the specific but also of the generic name. Similarly the effective publication of the generic name *Lopezia* dates from 1786, when Jacquin issued a plate of *Lopezia mexicana* with highly enlarged figures of two flowers in different stages of development (Jacq. Ic. Pl. Rar. t. 203). The figures of the flowers, though not literally "analyses," nevertheless supply detailed information of the floral structure, and may therefore be accepted as the equivalent of analyses for the purposes of Articles 37 and 38. It is generally held that a combined generic and specific description of a new genus and species validates both the generic and the specific name. Thus Endlicher's description of *Kissenia* ("Fissenia"), validates the binary combination *Kissenia capensis* as well as the generic name *Kissenia* (Endl. Gen., Suppl. 2, 76: 1842).

In the case of a *ditypic* or *polytypic* new genus, of which plates with analyses of two or more species are published together, it does not seem certain that the generic name is effectively published, since the plates are equivalent to descriptions of two or more species, and there may be nothing to show what are the characters of the proposed genus, although those of the constituent species are known. According to Art. 38, "the mere indication of species as belonging to a new genus, does not allow us to accept the genus in question as characterised and [the generic name] as effectively published," notwithstanding the fact that the *species* in question may have been previously described in detail. In 1894 Baillon published two plates of *Didierea madagascariensis*, with analyses and four plates of *D. mirabilis*, also with analyses, thus effectively publishing the names of these two *species* (Grandidier, Madag., Bot. tt. 261-262 D); in the writer's opinion the *generic* name, *Didierea*, was not effectively published until the appearance of Baillon's generic description in 1895 (Bull. Mus. Hist. Nat. Par. i. 22). Similarly the generic name *Villebrunea* Gaud. was not effectively published until 1854, when a generic description was supplied by Weddell (Ann. Sc. Nat. sér. 4, i. 195).

In the meantime, however, Miquel (Pl. Jungh. i. 39: March, 1851\*) published the new genus *Oreocnide*, which was reduced in

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\*Miquel subsequently (Fl. Ned. Ind. i. Afd. 2, 270: 1859; Ann. Mus. Bot. Lugd.-Bat. iv. 306: 1869) cited the date as 1852, but the first fascicle of *Plantae Junghuhnianae* was published in March 1851, according to Flora, 1851, 302, as has been pointed out by C. B. Robinson.



1856 by Blume (Mus. Bot. Lugd.-Bat. ii. 166-168), to *Villebrunea*. Weddell in 1856 (Monogr. Urtic. 451), also adopted the name *Villebrunea* Gaud. in preference to *Oreocnide* Miq. Miquel, however, contended that the name *Villebrunea* was not effectively published until 1854, when a description was supplied by Weddell, and he accordingly maintained *Oreocnide*, relegating *Villebrunea* to synonymy (Fl. Ned. Ind. i. Afd. 2, 269: 1859; Ann. Mus. Bot. Lugd.-Bat. iv. 306: 1869). Owing, however, to Weddell's adoption of *Villebrunea* in DC. Prodr. xvi. sect. 1, 235<sup>20</sup>, that name has come into general use, having been accepted in the following floras and lists: Franch. & Savatier, Enum. Pl. Jap. (1875); Hook. f. Fl. Brit. Ind. (1888); Forbes & Hemsley, Index Florae Sinensis (1899); Diels, Fl. Central-China (1900); K. Schum. & Lauterb. Fl. Deutsch. Südsee (1901); Matsum. & Hayata, Enum. Pl. Formosa (1906); Kawakami, List Pl. Formosa (1910); Matsum. Ind. Pl. Jap. (1912); Koord. Exkursionsfl. Java (1912); Ridley, Fl. Mal. Penins. (1924). On the other hand *Oreocnide* has been adopted, in accordance with the International Rules, by C. B. Robinson, Philippine Urticaceae (Philipp. Journ. Sc., Bot. vi. 16: 1911); Merrill, Bibl. Enum. Bornean Pl. (1921), and Enum. Philipp. Fl. Pl. (1923).

In view of the fact that the genus comprises not more than 10-12 species, none of which are of any economic importance, and that its bibliography is comparatively small, no great inconvenience is likely to be caused by the adoption of the name *Oreocnide* Miq., and it is therefore undesirable in the writer's opinion to propose the name *Villebrunea* Gaud. for conservation.

## LVIII.—TROPICAL AFRICAN PLANTS: VI.\*

J. HUTCHINSON AND J. M. DALZIEL.

### CAESALPINIACEAE (*continued*).

**Monopetalanthus compactus** Hutch. ex Lane-Poole Trees etc. of Sierra Leone 64, nomen; affinis *M. pteridophyllo* Harms, sed foliis minoribus, rhachi foliorum leviter pubescenti, racemis strobiliformibus differt.

*Arbor*; ramuli mox glabri. *Folia* usque ad 5 cm. longa; foliola circiter 20-juga, lineari-oblonga, unilateraliter auriculata, usque ad 1 cm. longa et 2.5 mm. lata, apice rotundata, supra nitida, infra venosa. *Racemi* strobiliformes, bracteis dense imbricatis striatis ciliatis extra sericeo-tomentosis tecti. *Bracteolae* 3-4 mm. longae, pubescentes. *Petalum* late obovatum, glabrum. *Stamina* 8.

Sierra Leone: Falaba, Apr., *Aylmer* 30 (type); Giehun, Apr. *Aylmer* 226.

**Monopetalanthus emarginatus** Hutch. et J. M. Dalz., sp. nov. imperfecte nota, foliolis apice emarginatis mucronatis circiter 10-11-jugis anguste oblongis 1-1.3 cm. longis 3-4 mm. latis glabris

\*Continued from *K.B.* 1928, p. 382.

supra nitidis costa utrinque prominente, fructibus oblongo-ellipticis breviter stipitatis circiter 6 cm. longis et 3 cm. latis rufo-tomentosis, seminibus planis late ellipticis 1·5 cm. longis distincta.

Sierra Leone : banks of the Morro River, *Unwin & Smythe* 42 (type). Ivory Coast : Lower Sassandra, Soubré, *Chevalier* 19174 bis.

**Berlinia splendida** *A. Chev.* Explor. Bot. Afr. Occid. Franç. 230, nomen.

*Arbor.* *Foliola* 3-juga, superiora majora elongato-oblonga, basi inaequaliter cordata, usque ad 40 cm. longa et 11 cm. lata, inferiora parva, circiter 8 cm. longa et 3·5 cm. lata, nervis lateralibus numerosis a costa sub angulo fere recto abeuntibus ; stipulae magnae, lanceolatae, dimidio connatae, 6 cm. longae, appendice basale reniforme usque ad 4 cm. lato nervoso. *Bracteolae* ellipticae, coriaceae, 4-5 cm. longae, 2·5-3 cm. latae, intra glabrae, extra rufo-tomentellae. *Calyx* circiter 2·5 cm. longus, glaber. *Petalum* posterior magnum, orbiculare, circiter 15 cm. latum, breviter unguiculatum, multe striatum. *Fructus* circiter 35 cm. longus et 10-12 cm. latus, brunneo-tomentellus, intra marginem nervis tribus parallelis ornatus.

Ivory Coast : Middle Cavally, Tebo village and neighbourhood, July, *Chevalier* 19387 (type). Gold Coast : Western Province, Namachere, *Chipp* 234 ; Ajakwa, *Chipp* 206 ; Cape Coast District, *Vigne* 935.

Vernacular name : " Kotopapa."

**Berlinia Hollandii** *Hutch. et J. M. Dalz.*, sp. nov. ; affinis *B. Craibianae* Bak. f., sed pedicellis brevioribus, bracteolis angustioribus intra breviter pubescentibus differt.

*Arbor* usque ad 10 m. alta. *Foliola* 3-4-juga, elliptico-lanceolata, longe et sensim acuminata, usque ad 16 cm. longa et 6 cm. lata, laxe reticulata, nervis lateralibus utrinsecus circiter 10 ; petioluli 6 mm. longi, puberuli. *Flores* laxe racemosi ; pedicelli usque ad 6 cm. longi, molliter tomentelli. *Bracteolae* oblanceolatae, circiter 6 cm. longae, intra breviter pubescentes, extra tomentellae. *Calycis lobi* circiter 3 cm. longi, extra appresse pilosi. *Petalum* posterior suborbiculare, circiter 7 cm. latum, ungue 4 cm. longo extra appresse piloso.

Nigeria : Southern Provinces ; Calabar, Mar., *Holland* 10 (type), 30.

**Berlinia grandiflora** *Hutch. et J. M. Dalz.*, comb. nov. *Westia grandiflora* Vahl in Skrivt. Nat. Selsk. 6 : 117 (1810) ; Macbride in Contrib. Gray Herb. 59 : 20 (1919). *Berlinia acuminata* Sol. ex Hook. f. et Benth. in Hook. Niger Fl. 36 (1849).

Extends from Sierra Leone to French Cameroons.

**Macrolobium Dawei** *Hutch. et J. M. Dalz.*, sp. nov. ; foliolis 5-jugis utrinque crebre reticulatis, bracteolis extra glabris, stipulis intrapetiolariibus oblongis valde distincta.



*Arbor* magna ; ramuli glabri. *Foliola* circiter 5-juga, lanceolata vel oblongo-elliptica, acute acuminata, 5-10 cm. longa, 2-4 cm. lata, chartacea, utrinque crebre reticulata, supra nitida, glabra ; stipulae intrapetiolares, cortice simulantes, 1 cm. longae. *Flores* glomerato-paniculati ; bracteae triangulares, 6 mm. longae, extra glabrae, intra tomentosae ; pedicelli 1.5-2 cm. longi ; bracteolae late oblongo-ellipticae, circiter 3 cm. longae et 1.8 cm. latae, coriaceae, extra glabrae, intra molliter tomentellae. *Calycis lobi* late lanceolati, 1 cm. longi, glabri. *Ovarium* stipitatum, tomentellum. *Fructus* planus, oblongus, circiter 14 cm. longus et 4 cm. latus, crebre verrucosus.

Sierra Leone : Bunkababe, May, *Lane-Poole* 121 ; without locality, *Dawe* 28 (type) ; Kennema, June, *Aylmer* 88 ; without locality, *D. G. Thomas* T 44 ; *N. W. Thomas* 10484.

**Macrobium bilineatum** *Hutch. et J. M. Dalz.*, sp. nov. ; affinis *M. obliquo* Stapf., sed foliolis 5-jugis basin versus longe cuneatis, bracteolis tomentellis differt.

*Arbor*. *Foliola* 5-juga, obovato-oblancoolata, basi longe cuneata, breviter acuminata, usque ad 16 cm. longa et 5 cm. lata, glabra, nervis lateralibus numerosis subobscuris, infra tenuiter reticulata ; stipulae persistentes, oblancoolatae, 3 cm. longae, appendice basale reniforme circiter 2.5 cm. lata. *Flores* paniculati ; pedicelli 5-10 mm. longi, tomentelli. *Bracteolae* vix 1 cm. longae, molliter tomentellae. *Fructus* oblongus, molliter tomentosus, intra marginem lineis duabus parallelis ornatus.

Sierra Leone : Kahreni, Apr., *Scott Elliot* 5588 (type) ; between Sellakuri and Yanga, Mar., *Scott Elliot* 5070. Ivory Coast : Attie, *Chevalier* 22662.

**Macrobium Talbotii** *Hutch. et J. M. Dalz.*, sp. nov. ; affinis *M. Preussii* Harms, sed stipulis plus minusve persistentibus foliaceis, foliolis basi obliquis differt.—*M. demonstrans* var. *Talbotii* Bak. f.

*Arbor* usque ad 8 m. alta. *Foliola* 3-4-juga, oblonga vel oblongo-oblancoolata, basi obliqua, usque ad 22 cm. longa et 7.5 cm. lata, nervis lateralibus numerosis intra marginem prominenter conjunctis ; stipulae lanceolatae, acutae, circiter 2.5 cm. longae, trinerviae, appendice mox deciduae. *Flores* dense paniculati ; pedicelli, 1 cm. longi, rufo-tomentosi. *Bracteolae* ellipticae, 1 cm. longae, extra hirsutae.

Nigeria : Southern Provinces, Oban, *Talbot* 1284, 1504 (type).

**Macrobium Aylmeri** *Hutch. et J. M. Dalz.*, sp. nov. ; affinis *M. Preussii* Harms, sed foliolis 2-jugis, nervis lateralibus paucis differt.

*Arbor* parva. *Foliola* 2-juga, obovata ad oblancoolata, acuminata, basi inaequilatera, usque ad 17 cm. longa et 7 cm. lata, interdum multo minora, glabra, nervis lateralibus utrinsecus usque ad 9, infra reticulata ; stipulae deciduae. *Flores* dense paniculati, pedicelli usque ad 1 cm. longi, rufo-tomentelli. *Bracteolae* ellipticae,

8 mm. longae, tomentellae. *Fructus* circiter 10 cm. longus, glaber, intra marginem linea una ornatus.

Sierra Leone : Freetown, Colonial Reserve, Jan., *King-Church* 8 ; Commendi, Nov., *Aylmer* 263 (type) ; Buri Town, on the sea beach, *Unwin & Smythe* 9 ; York, near mangrove swamp, *Lane-Poole* 80 ; John Obey, *Lane-Poole* 423.

**Macrolobium chrysophylloides** *Hutch. et J. M. Dalz.*, sp. nov. ; affinis *M. macrophylo* Macbride, sed foliolis apice rotundatis nervis lateralibus numerosioribus differt.

*Arbor* magna ; ramuli rufo-tomentelli. *Foliola* 3-4 juga, elongato-oblongo-obovato, superiora usque ad 25 cm. longa et 9 cm. lata, coriacea, infra breviter tomentella, nervis lateralibus utrinsecus 14-18 infra prominentibus ; stipulae deciduae. *Paniculae* circiter 15 cm. longae, ramulis lateralibus brevibus rufo-tomentellis. *Bracteolae* circiter 5 mm. longae, tomentellae.

Sierra Leone : Commendi-Gengaru Road, Nov., *Aylmer* 261 (type). Ivory Coast, Middle Comoe ; between Bébou and Mbasso, *Chevalier* 22648.

**Cryptosepalum minutifolium** *Hutch. et J. M. Dalz.*, comb. nov. *Hymenostegia minutifolia* A. Chev. in Bull. Soc. Bot. Franç. 58, Mém. 8 : 165 (1912).

Ivory Coast : Middle Cavally, between Toula and Nikaougnié, July, *Chevalier* 19579.

**Bussea occidentalis** *Hutch. ex Chipp*, Trees etc. of the Gold Coast 17, nomen ; species foliis bipinnatis, foliolis longe acuminatis distincta.

*Arbor* magna ; ramuli ferrugineo-tomentosi. *Folia* bipinnata, pinnis 3-jugis ; foliola alterna, circiter 5-juga, oblongo-elliptica, longissime acuminata, basi rotundata, 6-10 cm. longa, 3-4 cm. lata, laxe reticulata, supra nitida, glabra ; petioluli 3 mm. longi. *Racemi* spiciformes, simplices vel ramosi, ubique ferrugineo-tomentelli, usque ad 25 cm. longi ; pedicelli 5 mm. longi. *Sepala* triangulari-ovata, subacuta, circiter 1 cm. longa. *Petala* rugosa, margine incisa, obovata, circiter 2 cm. longa. *Filamenta* et stylus dense villosus. *Fructus* anguste oblanceolatus, lignosus, valvis recurvis circiter 15 cm. longis et 3.5 cm. latis demum glabrescentibus.

Sierra Leone : Hangha, Aug., *Lane-Poole* 394 ; *Aylmer* 241. Liberia : Gbanga, Sept., *Linder* 479. Gold Coast : Dunkwa, Aug., *Chipp* 715 (type) ; Essuasu, May, *Vigne* 170 ; Obuasi, *Vigne* 920 ; Kankan, June, *Thompson* 90.

#### MIMOSACEAE.

**Calpocalyx sericeus** *Hutch. et J. M. Dalz.*, sp. nov. ; pinnis 1-2-jugis foliolis 3-5-jugis infra sericeo-tomentellis paniculis elongatis valde distincta.

*Frutex* scandens usque ad 10 m. longus ; rami conspicue hexagoni, juniores tomentelli, demum glabrescentes et lenticellati.



*Folia* bipinnata, pinnis 1-2-jugis ; foliola 3-5-juga, oblongo-elliptica, subacuta, basi rotundata, 3.5-7 cm. longa, 1.5-3 cm. lata, infra sericeo-tomentella, nervis lateralibus utrinsecus circiter 5. *Paniculae* elongatae, ubique tomentellae ; rami laterales graciles, 5-7 cm. longi ; bracteae numerosae, subulatae, 2 mm. longae, persistentes ; pedicelli 1.5 mm. longi. *Calyx* cupularis, breviter dentatus. *Petala* oblongo-lanceolata. *Ovarium* leviter pubescens, stipitatum.

Liberia : Peáhtah, Oct., *Linder* 478A (type) ; Gbanga, Sept., *Linder* 478.

**Entada flexuosa** Hutch. et J. M. Dalz., sp. nov. ; affinis *E. Wahlbergii* Harv., sed foliolis numerosioribus et angustioribus calyce minus dentato differt.—*E. Wahlbergii* Oliv. Fl. Trop. Afr. 2 : 326, non Harv.

*Frutex* scandens ; ramuli insigniter flexuosi, glabri. *Folia* bipinnata, pinnis 2-jugis ; foliola 12-15-juga, linearia, circiter 1.5 cm. longa et 2.5 mm. lata, glabra. *Racemi* circiter 6 cm. longi, glabri ; bracteae minutae, deciduae ; pedicelli brevissimi. *Calyx* cupularis, triangulari-dentatus. *Petala* late lanceolata, 3 mm. longa. *Fructus* falcatus, usque ad 22 cm. longus, circiter 3.5 cm. latus, uno margine crenatus, segmentis transverse oblongis.

French Sudan : Bama, June, *Chevalier* 943. Ivory Coast : Middle Comoé, Dec., *Chevalier* 22612. Nigeria : Northern Provinces ; Nupe, *Barter* 991 (type) ; Yola, July, *Dalziel* 7. Djur-land : Great Seriba Ghattas, *Schweinfurth* 95, 1868.

**Dichrostachys glomerata** Hutch. et J. M. Dalz., comb. nov. *Mimosa glomerata* Forsk. Fl. Aegypt.-Arab. 177 (1775). *D. nutans* Benth. in Hook. Journ. Bot. 4 : 353 (1842) ; Bak. in Oliv. Fl. Trop. Afr. 2 : 333. *D. platycarpa* Welw. Apont. 576. *D. Lugardae* N. E. Br. Kew Bull. 1909 : 106. *Cailliea dichrostachys* Guill. et Perr. Tent. Fl. Seneg. 239 (1883). *C. glomerata* Macbride in Contrib. Gray Herb. n.s. 59 : 16 (1919).

Widely distributed over Tropical and parts of South Africa.

**Cathormion altissimum** Hutch. et J. E. Dandy, comb. nov. *Albizzia altissima* Hook. f. Niger Fl. 332 (1849). *Pithecolobium altissimum* Oliv. Fl. Trop. Afr. 2 : 364. *Albizzia Passargei* Harms in Engl. Bot. Jahrb. 26 : 253 (1899).

Widely distributed from Sierra Leone to the Belgian Congo.

**Cathormion Dinklagei** Hutch. et J. E. Dandy, comb. nov. *Mimosa Dinklagei* Harms in Engl. Bot. Jahrb. 26 : 253 (1899). *Albizzia Dinklagei* Harms l.c. 53 : 455 (1915).

Extends from French Guinea to Liberia and also in French Cameroons.

**Baphia confusa** Hutch. et J. M. Dalz., sp. nov. ; a *B. spathacea* Hook. f. foliis haud vel leviter acute acuminatis late ellipticis differt.—*B. spathacea* Bak. in Oliv. Fl. Trop. Afr. 2 : 250, partim, non Hook. f.

*Frutex* vel arbor usque ad 8 m. alta, interdum scandens ; ramuli leviter flexuosi, breviter pubescentes. *Folia* late elliptica, basi rotundata, apice acute et breviter acuminata, 10–18 cm. longa, 6–8 cm. lata, infra reticulata et minute pubescentia, nervis lateralibus utrinsecus 6–7 ; petioli 2–3 cm. longi, pubescentes, pulvino 4 mm. longo. *Flores* paniculati ; pedicelli vix 1 cm. longi, breviter hirsuti ; bracteolae ellipticae, 5 mm. longae. *Calyx* spathaceus, 1.3 cm. longus, extra appresse tomentosus. *Vexillum* suborbiculare, circiter 2 cm. longum. *Fructus* clavatus, curvatus, rostratus, circiter 4 cm. longus, tomentosus. *Semina* nitida, 1.2 cm. longa.

Nigeria : Southern Provinces ; Onitsha, *Unwin* 82 ; Degema, *Talbot* 3729 ; Uzi, *Thomas* 2336 ; Calabar, *Holland* 72 ; Oban, *Talbot* 1209, 1331, 1555 ; Cameroons River, *Mann* 746 (type), 2219. Fernando Po, *Mann* 216 ; *Barter* 1613, 2063.

**Angylocalyx Talbotii** Bak. f. ex Hutch. et J. M. Dalz., sp. nov. ; valde affinis *A. oligophyllo* Bak. f., sed floribus roseis carmineo tinctis, vexillo recurvato forsitan satis distincta.

*Foliola* circiter 4-juga, alterna, ovato-elliptica ad oblongo-elliptica, acute acuminata, basi leviter inaequaliter rotundata, 12–25 cm. longa, 5–9 cm. lata, utrinque crebre reticulata, nervis lateralibus utrinsecus 5–7 intra marginem crenulato-ramosis ; petioluli fere 1 cm. longi, verrucosi. *Flores* e trunco fasciculati, breviter pedicellati, rosei, carmineo maculati. *Calyx* spathaceus, 1.5 cm. longus, minute papillosus. *Corolla* 2–2.5 cm. longa, vexillo recurvato.

Nigeria : Southern Provinces ; Oban, *Talbot* 1205 (type) ; 239.

**Dalbergia Dalziellii** Bak. f. ex Hutch. et J. M. Dalz., sp. nov. ; foliolis subacutis terminale majore late obovato-elliptico infra costa dense pubescente distincta.

*Frutex* scandens ; ramuli dense molliter tomentosi. *Foliola* circiter 5–6, late obovato-elliptica, usque ad 15 cm. longa et 6.5 cm. lata, infra costa dense pubescentia, nervis lateralibus utrinsecus circiter 8 marginem versus multe ramosis ; stipulae late lanceolatae, foliaceae. *Flores* axillares, breviter racemosi, conferti ; pedicelli graciles, circiter 5 mm. longi, pubescentes. *Calyx* 3 mm. longus, extra dense pubescens. *Corolla* 8 mm. longa. *Fructus* anguste oblongus, utrinque rotundatus, abrupte stipitatus, 6–9 cm. longus, 1.5–2 cm. latus, glaber et laxe reticulatus, seminibus 1–3.

Nigeria : Southern Provinces ; Lagos, Ikoyi Plains, Jan.-Feb., *Dalziel* 1220 (type), 1368 ; Ebute Metta, Jan., *Millen* 95, 211 ; Bonny, Feb., *Kalbreyer* 55.



**Dalbergia setifera** Hutch. et J. M. Dalz., sp. nov. ; ramulis junioribus pilis reflexis dense hirsutis, racemis brevissimis distincta.

*Ramuli* juniores pilis reflexis rufescentibus dense hirsuti. *Foliola* circiter 4-juga, inferiora ovata, superiora oblonga vel oblongo-elliptica, basi rotundata, acute acuminata, usque ad 8 cm. longa et 2.5 cm. lata, infra pilis patulis pubescentia ; stipulae lanceolatae, acuminatae, circiter 1 cm. longae. *Racemi* axillares, brevissimi ; pedicelli 3-4 mm. longi, pubescentes. *Calyx* 3.5 mm. longus, breviter dentatus, extra laxe pubescens. *Corolla* 8 mm. longa.

Gold coast : without locality, *Evans* 24.

**Dalbergia oligophylla** Baker ex Hutch. et J. M. Dalz., sp. nov. ; affinis *D. Bakeri* Welw., sed foliolis plus minusve oblongis acuminatis differt.

*Frutex* scandens usque ad 8 m. longus ; ramuli glabri. *Foliola* circiter 4-juga, oblonga vel obovata, basi breviter cuneata, usque ad 7 cm. longa et 3 cm. lata, obtuse acuminata, infra leviter pubescentia, nervis lateralibus numerosis ; petioluli 4 mm. longi. *Racemi* axillares, brevissimi, ramosi ; pedicelli 2-3 mm. longi, apicem versus bracteolis geminatis 1 mm. longis. *Calyx* 5 mm. longus, puberulus, triangulari-dentatus. *Corolla* 1 cm. longa.

Cameroons Mt. : 1600 m., Dec., *Mann* 2172.

**Dalbergia albiflora** A. Chev. Explor. Bot. Afr. Occid. Franç. 210, nomen ; affinis *D. hostili* Benth., sed foliolis circiter 3-jugis late obovato-ellipticis infra pubescentibus floribus confertis differt.

*Frutex* scandens ; ramuli pubescentes. *Foliola* circiter 3-juga, late obovato-elliptica, conspicue apiculata, 3.5-5 cm. longa, 2-3.5 cm. lata, infra pubescentia, nervis lateralibus utrinsecus 6-8 ; petioluli 2 mm. longi. *Flores* paniculati, dense conferti. *Calyx* 3.5 mm. longus, breviter tomentosus. *Corolla* glabra. *Stamina* monadelpha.

Ivory Coast : Middle Sassandra ; between Soubré and Péhiri, June, *Chevalier* 19175.

**Ecastaphyllum Heudelotii** Hutch. et J. M. Dalz., comb. nov. *Dalbergia Heudelotii* Stapf in Journ. Linn. Soc. 37 : 95 (1905). *E. monetaria* Baker in Oliv. Fl. Trop. Afr. 2 : 236, non Pers.

Extends from French Guinea to the French Cameroons.

**Millettia pilosa** Hutch. et J. M. Dalz., sp. nov. ; affinis *M. Stapfianae* Dunn, sed foliolis infra nervis pilosis abrupte caudato-acuminatis, floribus minoribus differt.

*Ramuli* ferrugineo-hirsuti, angulares. *Foliola* circiter 4-juga, obovato-elliptica, abrupte caudato-acuminata, basi rotundata, 8-11 cm. longa, 3.5-5 cm. lata, infra nervis patule pilosa, nervis lateralibus utrinsecus circiter 7 prominenter conjunctis ; petioluli 3-4 mm. longi ; hirsuti. *Racemi* graciles, usque ad 15 cm. longi, ubique molliter tomentelli ; bracteae deciduae ; pedicelli usque

ad 5 mm. longi. *Calyx* 4 mm. longus, ferrugineo-tomentosus, undulatus. *Corolla* 1.6 cm. longa, vexillo extra sericeo-tomentosa.

Nigeria : Southern Provinces ; Oban, *Talbot* 583, 1308 (type).

**Millettia Irvinei** *Hutch. et J. M. Dalz.*, nom. nov. *Robinia multiflora* Schumach. & Thonn. Beskr. Guin. Pl. 350 (1827), non *Millettia multiflora* Coll. et Hemsl.

Gold Coast : Accra Plains *Thonning* (type) : *Irvine* 47, 99, 211.

**Tephrosia djalonica** *A. Chev.* Explor. Bot. Afr. Occid. Franç. 179, nomen ; valde affinis *T. radicante* Welw., sed stipulis subulatis, foliolis 2-jugis obovatis emarginatis et mucronatis 2-2.5 cm. longis infra fere glabris, floribus paucis breviter racemosis circiter 0.8 cm. longis differt.

French Guinea : Futa Jallon, between Timbo and Ditinn, Sept., *Chevalier* 18447.

**Astragalus Vogelii** *Hutch. et J. M. Dalz.*, comb. nov. *Phaca Vogelii* Webb in Hook. Nig. Fl. 123, t. 8 (1849).—*Astragalus prolixus* Sieb. ex Bunge, *Astrag.* 1 : 9 (1868) ; 2 : 6.

Occurs from the Cape Verde Islands through the French Sudan to Arabia.

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## LIX.—MISCELLANEOUS NOTES.

We learn that Mr. W. R. B. OLIVER, F.L.S., has been appointed Director of the Dominion Museum, Wellington, New Zealand.

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The following appointments have been made by the Secretary of State for the Colonies :—Mr. R. M. DAVIES, B.Sc. (Agric.), to be Superintendent, Agricultural Department, Nigeria ; Mr. J. D. BROATCH, B.Sc. (Agric.), and Mr. C. L. SKIDMORE, B.Sc. (Agric.), to be Assistant Superintendents of Agriculture, Gold Coast ; Mr. J. E. BRUCE to be District Agricultural Officer, Tanganyika Territory ; Mr. G. G. AUCHINLECK, Deputy Director of Agriculture, to be Director of Agriculture, Gold Coast, in succession to Mr. C. H. Knowles, who retires (*K.B.* 1925, page 346).

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DR. L. COCKAYNE.—We note with great pleasure that Dr. L. Cockayne, F.R.S., has been awarded the Darwin medal of the Royal Society for his contributions to Ecological Botany.

The Darwin Medal, which is accompanied by a grant of £100, is given biennially in reward for work of acknowledged distinction (especially in Biology) in the field in which Mr. Darwin himself laboured.

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**Botanical Magazine.**—Part iv. of Vol. clii (1926) of the Botanical Magazine, which was published in October, 1928, contains the following illustrations :—



*Tulipa lanata* E. Regel (t. 9151), flowers brilliant scarlet-vermilion with a large black blotch of varying size and shape, usually bordered with yellow, at the base of the tepals, native of Bokhara but cultivated in Kashmir from about the sixteenth century on the roofs of mosques; *Ozothamnus Antennaria* Hook. f. (t. 9152), a Tasmanian shrub which has proved to be one of the hardiest Antipodean plants in cultivation at Kew; *Berberis Hookeri* Lem. (t. 9153), with greenish-yellow flowers and blackish-purple berries, from Sikkim; figured in the flowering state only as *B. Wallichiana* on t. 4656 (1852); *Solanum laciniatum* Ait. t. 9154, an Australian species confused in floras with the New Zealand *S. aviculare*, but here considered to be morphologically and geographically distinct; *Paphiopedilum Robinsonii* Ridley t. 9155, a Malayan orchid with dull yellowish-green petals with a very broad purple band, and a purple and green lip; *Rhoisiodendron hippophaeoides* Balf. f. et W. W. Sm. (t. 9153), a dwarf\* species from Yunnan with flowers varying in colour from lavender-blue to rose-pink; *Muscari armeniacum* Baker (t. 9157), the well-known "Heavenly Blue" grape-hyacinth of gardens; *Cestrum psittacinum* Stapf (t. 9158), a tall climber with racemes of bright orange and green flowers, believed to be of Central American origin; figured and described from a plant that has been in cultivation at Kew for upwards of 30 years; *Saxifraga amabilis* Stapf (t. 9159), a supposed natural hybrid between *S. Striömyi* and *S. Semperivivum*, described and figured from a plant of unknown origin in cultivation at Kew; *Hypericum Leschenaultii* Choisy (t. 9160), native of Java and Sumatra, figured from specimens from Glasnevin, where it has been grown for many years, though the plant appears to be still rare in cultivation; *Guevina avellano* Molina (t. 9161), the guevina, huevina or avellano of Southern Chile, an evergreen shrub or tree with edible seeds, that has proved to be hardy in Ireland and the South-west of England.

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**Paddy in Ceylon.**—In recent numbers of the Tropical Agriculturist† accounts are given by Mr. Lord, Economic Botanist, and others, of investigations that are being carried on in Ceylon with a view to increasing the paddy output of the Colony. It is estimated that Ceylon produces about 13 million bushels of paddy per annum, but has to import over 31 million bushels, either in the form of paddy or rice, from elsewhere. The causes that militate against a possible greatly increased output from Ceylon are clearly outlined by Mr. Lord in his paper on "Some of the Limiting Factors in the Improvement of Paddy Cultivation in Ceylon" (Vol. lxx. no. 6). One of the chief factors is the conditions of tenancy to which the

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\*By a printer's error the height is given as 1-5 m. instead of 1.5 m.

†The Tropical Agriculturist, Vol. lxx. pp. 207-215, 374-382; Vol. lxxi. No. 1: April, June, July, 1928. The Agricultural Department, Peradeniya, Ceylon.

actual cultivators are subjected ; the " half share " system with the landlord being the one commonly in vogue. The evil influence this system has on many other aspects of paddy cultivation is pointed out and it is shown how, under this system, adequate weeding does not pay the cultivator and smaller crops are reaped than might otherwise be the case.

What are regarded as three of the most promising lines along which improvement might be effected are seed and seed supply, cultural methods, and increase in size of holdings. At the Paddy Seed Station at Belunmahara yield trials with several pure line paddies are being carried on. Three of the common cultivators' paddies in Ceylon are said to be " Haniel," " Murungan," and " Elwi," a hill paddy. The last named is of course grown under dry conditions, and is one of the common crops with the prevalent " shifting cultivation." The seed is invariably found to be contaminated with that of *Paspalum scrobiculatum* L. F. N. H.

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**New Zealand Trees and Shrubs.\***—Dr. H. H. Allan, who is a field botanist and ecologist of considerable experience in New Zealand, realises that for rapid determination of plants in the field a book less bulky and easier to use than Cheeseman's well-known Manual of the New Zealand Flora is required. He also realises the necessity of sometimes having to depend on vegetative parts for identification, and has therefore used the leaves as the basis of classification in his little key to the trees and shrubs of New Zealand. The book is, however, more than a key, since a short description of each species is given together with other biological notes.

There is a short introduction in which, among other subjects, the plant communities of New Zealand, status of forms, growth forms, and characteristics of leaves, are dealt with shortly. The arrangement of the key, etc., is very clear and there is a striking lack of typographical errors. The book is illustrated by excellent photographs showing various species, hybrid series, etc. Since the various wild hybrid swarms known to Dr. Allan are included, while the nomenclature and taxonomy are up to date, the book should be of real value to herbarium botanists as well as to field botanists and gardeners. A key to the genera based on floral characters adds to the value of the book, and, if flowers are available, enables any determinations made on the vegetative parts only to be checked.

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**Belosynapsis.**—In the article " Dalzellia or Belosynapsis," in K.B. no. 6, 1928, the name **Belosynapsis uniflora** C. E. C. Fischer (p. 254) should read **Belosynapsis moluccana** C. E. C. Fischer, comb. nov.

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\*New Zealand Trees and Shrubs and How to Identify Them, by Dr. H. H. Allan. Whitcomb & Tombs, Limited, Auckland, Christchurch, Dunedin, Wellington, Melbourne and London, 1928, pp. x + 188, plates 28, price 6s. 6d.

# INDEX.

## A.

- Acacia Meeboldii Craib*, 66.  
*Achras Sapota*, 302.  
*Achyranthes Talbotii Hutch. et J. M. Dalz.*, 29.  
*Adenia Dinklagei Hutch. et J. M. Dalz.*, 214.  
 — *tenuispira Hutch. et J. M. Dalz.*, 214.  
*Adina nobilis Geddes*, 240.  
 — *parvula Geddes*, 241.  
*Aeranthus elegans Rchb. f.*, 34.  
 — *sphenochilus Kraenzl.*, 34.  
*Africa*, genus *Dichapetalum* in (with figs.), 115.  
 — South Central, notes on Forest Flora of (with plate and figs.), 193.  
 — West Tropical, Flora of, 303.  
*African Grasses*, notes on, 35, 130.  
 — Plants, Tropical, 22, 211, 296, 380, 397.  
*Afrobrunnichia Hutch. et J. M. Dalz.*, gen. nov., 28.  
 — *africana Hutch. et J. M. Dalz.*, 28.  
 — *erecta Hutch. et J. M. Dalz.*, 28.  
*Ailanthus* (spelling of), 286.  
*Allophylus Gardineri Summerhayes*, 389.  
 — *sechellensis Summerhayes* 390.  
*Altingia siamensis Craib*, 68.  
*Altson*, R. A., 254.  
*Amaranthus* (spelling of), 287.  
*Amomum muricatum* (with figs.), 105.  
*Amphiblema grandifolium A. Chev.*, 221.  
*Ancistrocladus uncinatus Hutch. et J. M. Dalz.*, 218.  
*Andes*, some Violets from the, 133.  
*Andes of Argentina*, new spp. from, 107.  
*Angylocalyx Talbotii Bak. f. ex Hutch. et J. M. Dalz.*, 402.  
*Anisophyllea purpurascens Hutch. et J. M. Dalz.*, 226.  
*Annona* (spelling of), 113.  
*Anplectrum patens Geddes*, 72.  
 — *stellulatum Geddes*, 236.  
 Appointments:—  
     *Altson*, R. A., 254.  
     *Auchinlech*, G. G., 404.  
     *Bridges*, M. C. M., 112.  
     *Broatch*, J. D., 404.  
     *Bruce*, J. E., 404.  
     *Bruins-Lich*, H., 301.  
     *Cairns*, T. C., 254.  
     *Cowan*, G., 383.  
     *Davies*, R. M., 404.  
     *Dawe*, M. T., 254.  
     *Edwards*, A., 301.  
     *Faull*, J. H., 254.  
     *Gillett*, S., 254.  
     *Greenway*, P. J., 156.  
     *Guest*, E. R., 336.  
     *Handley*, C. B. C., 156.  
     *Harcourt*, F. G., 112.  
     *Hosking*, H. R., 336.  
     *Illingworth*, J. L., 156.  
     *Leach*, E. W., 383.  
     *Line*, C. W. J., 383.  
     *McCarthy*, P. M., 47.  
     *McIntosh*, E. S., 78.  
     *Marsland*, H., 156.  
     *Martyn*, E. E., 383.  
     *Moreau*, R. E., 156.  
     *Musk*, H., 112.  
     *Nauen*, J. C., 254.  
     *Nicholl*, Capt. E. M., 156.  
     *Nutman*, F. J., 112.  
     *Oliver*, W. R. B., 404.  
     *Palmer*, J. H., 383.  
     *Rounce*, N. V., 336.  
     *Savile*, A. H., 336.  
     *Skidmore*, C. L., 404.  
     *Smart*, H. P., 383.  
     *Smith*, C. A., 157.  
     *Squire*, I. G. C., 254.  
     *Storey*, H. H., 47.  
     *Sunman*, W. O., 112.  
     *Svedelius*, N. E., 301.  
     *Tempany*, H. A., 301.  
     *Thorns*, F. W., 301.  
     *Toms*, K. E., 78.  
     *Turnbull*, G. N. K., 383.  
     *Turner*, E. Phillips, 336.  
     *Voelcker*, O. J., 383.  
     *Walford*, A. S., 254.  
     *Wallace*, J. W., 112.  
     *Ward*, J. F., 47.  
     *Williams*, T. L., 47.  
*Argentine Andes*, new spp. from, 107.  
*Arisaema Monbeigii Gamble*, 146.  
*Aromadendron elegans var. glaucum Dandy*, 183.  
 — *nutans Dandy*, 183.  
*Arundinaria Gallatlyi Gamble* (with figs.), 47.



- Asiatic Gentians, new, 49.  
*Asperula ambleia* Shaw et Turrill, 99.  
 — *asthenes* Shaw et Turrill, 100.  
 — *Charophyton* Shaw et Turrill, 101.  
 — *conferta*  $\beta$  abbreviata Shaw et Turrill, 87.  
 — *conferta*  $\gamma$  scoparioides Shaw et Turrill, 87.  
 — *Cunninghamii* Shaw et Turrill, 97.  
 — *euryphylla* Shaw et Turrill, 100.  
 — — var. *octophylla* Shaw et Turrill, 100.  
 — — var. *tetraphylla* Shaw et Turrill, 100.  
 — *gemella* Shaw et Turrill, 102.  
 — *Gunnii* var. *curta* Shaw et Turrill, 90.  
 — *lissocarpa* Shaw et Turrill, 95.  
 — *scoparia* var. *ulicina* Shaw et Turrill, 89.  
 — *subsimplex* forma *aquatica* Shaw et Turrill, 93.  
 — *subulifolia* Shaw et Turrill, 98.  
 — *wimmerana* Shaw et Turrill, 94.  
 — — forma *glaberrima* Shaw et Turrill, 94.  
*Asperulae Australienses*, 81.  
*Astragalus Vogelii* Hutch. et J. M. Dalz., 404.  
*Astrebla* or Mitchell Grasses, 257.  
 — *squarrosa* C. E. Hubbard, 259.  
*Auchinlech*, G. G., 404.  
*Avenastrum albinerve* Hubbard et Sandwith, 154.  
 — *bromoides* Hubbard et Sandwith, 154.  
 — *sarracenorum* Hubbard et Sandwith, 154.  
 — *sulcatum* Hubbard et Sandwith, 155.

## B.

- Banana, the, in some Tropical Eastern countries—its forms and variations (with plates), 305.  
*Baphia confusa* Hutch. et J. M. Dalz., 402.  
*Barringtonia Marcanii* Craib, 237.  
*Bauhinia concreta* Craib, 63.  
 — *tubicalyx* Craib, 64.  
 Becker, W., On some Violets from the Andes, 133.  
 — — New Chinese spp. of *Viola*, 247.  
*Begonia lushaiensis* Fischer, 273.  
 — *Smithiae* Geddes, 239.  
 — *tiomanensis* Ridl., 73.

- Belosynapsis* or *Dalzellia*, 252, 406.  
 — *capitata* C. E. C. Fischer, 254.  
 — *moluccana* C. E. C. Fischer, 406.  
 — *uniflora* C. E. C. Fischer, 254, 406.  
 — *vivipara* C. E. C. Fischer, 254.  
*Berberis lologensis* Sandwith, 108.  
*Bergia guineensis* Hutch. et J. M. Dalz., 27.  
*Berlinia grandiflora* Hutch. et J. M. Dalz., 398.  
 — *Hollandii* Hutch. et J. M. Dalz., 398.  
 — *splendida* A. Chev., 398.  
*Blastus stellulatus* Geddes, 236.

## Books :—

- Agricultural Journal of British Guiana, 255.  
 Beautiful Flowers of Kashmir, 80.  
 Botanical Magazine, 112, 159, 404.  
 British Garden Flora, A, 78.  
 Care of Ornamental Trees, 304.  
 Flora of West Tropical Africa, 303.  
 Gladiolus, 48.  
 Ground-nut cultivation in Central Provinces, India. Bulletin of Department of Agriculture, 160.  
 Harvard Botanical Gardens, Cuba, Report of, 160.  
 Icones Plantarum Sinicarum, 255.  
 Journal of Botanical Society of South Africa, 159.  
 New Zealand Trees and Shrubs, and how to identify them, 406.  
 Pioneers of Plant Study, 304.  
 Plants of Trinidad and Tobago, 48.  
 Shrubs, 47.  
 Wild Flowers of Kashmir, 80.  
*Borago* (spelling of), 288.  
 Botanical Magazine, 112, 159, 404.  
 Botanical Society of South Africa, Journal of, 159.  
*Brachystegia Bournei* Greenway (with fig.), 200.  
 — *nchangensis* Greenway (with fig.), 201.  
*Brazil*, *Diacrodon*, a new genus of Rubiaceae from, 32.  
 Bridges, M. C. M., 112.  
 British Guiana, Agricultural Journal of, 255.  
 — — new species from, 365.  
 Broatch, J. D., 404.  
 "Bromus," nomenclature of, 209.  
 Bruce, J. E., 404.  
 Bruins-Lich, H., 301.  
*Brunella* (spelling of), 292.

*Bulbophyllum Frostii* Summerhayes, 76.  
 Burma, contributions to Flora of (with figs.), 42, 332.  
*Bussea occidentalis* Hutch. ex Chipp, 400.  
 Butterworts, Orchid-flowered, 230.

# C.

Cairns, T. C., 254.  
*Calceolaria cymbiflora* Sandwith, 111.  
*Calpocalyx sericeus* Hutch. et J. M. Dalz., 400.  
*Calvoa monticola* A. Chev., 221.  
*Camphorina* and *Septina*, 41.  
*Canthium berberidifolium* Geddes, 244.  
 — *carinatum* Summerhayes, 391.  
 — *sechellense* Summerhayes, 391.  
*Capparis biloba* Hutch. et J. M. Dalz., 25.  
*Carex leucostachys* Ridl., 77.  
*Carpolobia glabrescens* Hutch. et J. M. Dalz., 26.  
*Casearia bridelioides* Mildbr., 213.  
 — *inaequalis* Hutch. et J. M. Dalz., 213.  
*Cassia pteridophylla* Sandwith, 375.  
*Cathormion altissimum* Hutch. et J. E. Dandy, 401.  
 — *Dinklagei* Hutch. et J. E. Dandy, 401.  
*Catostemma Altsoni* Sandwith, 366.  
 Central Provinces, India, Bulletin of Department of Agriculture, 160.  
 Ceylon, Paddy in, 405.  
*Chenolea muricata* Hutch. et J. M. Dalz., 29.  
 Chile, new spp. of *Nototriche* from, with notes on *Malvastrum* (with figs.), 17.  
 China, new *Medicago* from (with figs.), 270.  
 Chinese spp. of *Viola*, new, 247.  
*Chrysanthemum paludosum* var. *pinnatifidum* Hubbard et Sandwith, 150.  
*Clathrotropis paradoxa* Sandwith, 369.  
*Cleistanthus discolor* Summerhayes, 144.  
 Cockayne, Dr. L., 404.  
 Coconuts, cover crops for, 172.  
*Coelospermum acuminatum* Geddes, 244.  
 — *luteum* Geddes, 245.  
 Coffee, cover crops for, 169.  
*Cola Johnsonii* Hutch. et J. M. Dalz., 297.

*Cola lanata* Bak. f. ex Hutch. et J. M. Dalz., 298.  
*Coleus subfrutectosus* Summerhayes, 392.  
*Combretum bauchiense* Hutch. et J. M. Dalz., 224.  
 — *crotonoides* Hutch. et J. M. Dalz., 224.  
 — *Dalzielii* Hutch., 225.  
 — *homalioides* Hutch. et J. M. Dalz., 225.  
 — *Mildbraedii* Hutch. et J. M. Dalz., 225.  
 — *obanense* Hutch. et J. M. Dalz., 226.  
 — *platypterum* Hutch. et J. M. Dalz., 224.  
 — *procurum* Craib, 69.  
 — *relictum* Hutch. et J. M. Dalz., 225.  
*Commelina Jacobi* Fischer, 277.  
*Conopharyngia coffeoides* Summerhayes, 392.  
*Cooperia*, discovery of the genus in Peru (with fig.), 385.  
 — *albicans* Sprague (with fig.), 387.  
 Cover Crops in tropical plantations, 161.  
 Cowan, G., 383.  
*Croton Collettii* Hutch. et J. M. Dalz., 300.  
 — *penduliflorus* Hutch., 300.  
*Cryptosepalum minutifolium* Hutch. et J. M. Dalz., 400.  
 Cuba, Report of Harvard Botanical Gardens in, 160.  
 Curtis, C. H., 78.  
 Curtis, Charles (obit.), 383.  
*Cynoglossum cheirifolium* var. *immarginatum* Hubbard et Sandwith, 151.  
*Cynometra ananta* Hutch. et J. M. Dalz., 381.  
 — *leonensis* Hutch. et J. M. Dalz., 381.

# D.

*Dalbergia albiflora* A. Chev., 403.  
 — *Dalzielii* Bak. f. ex Hutch. et J. M. Dalz., 402.  
 — *oligophylla* Baker ex Hutch. et J. M. Dalz., 403.  
 — *setifera* Hutch. et J. M. Dalz., 403.  
*Dalzellia* or *Belosynapsis*, 252, 406.  
 Dalziel, J. M., and Hutchinson, J., Tropical African Plants, 22, 211, 296, 380, 397.

Dandy, J. E., *Malayan Magnoliaceae*, 183.  
*Daniellia Oliveri Hutch. et J. M. Dalz.*, 382.  
 — *pubescens Hutch. et J. M. Dalz.*, 382.  
*Dasylepsis assinensis A. Chev.*, 30.  
 Davies, R. M., 404.  
 Dawe, M. T., 254.  
 — Branching in the African Oil Palm (with plate), 21.  
*Decades Kewenses*, 72, 141, 272.  
*Desplatia lutea A. Chev.*, 229.  
*Diacrodon*, a new genus of Rubiaceae from Brazil, 32.  
 — *Sprague*, gen. nov., 33.  
 — *compressus Sprague*, 33.  
*Dichapetalum*, the genus, in East, South Tropical, and Subtropical Africa (with figs.), 115.  
*Dichapetalum chrysobalanoides Hutch. et J. M. Dalz.*, 380.  
 — *cordifolium Hutch. et J. M. Dalz.*, 380.  
 — *Dummeri M. B. Moss*, 123.  
 — *Linderi Hutch. et J. M. Dalz.*, 380.  
 — *mossambicense* (with figs.), 120.  
 — *Rowlandii Hutch. et J. M. Dalz.*, 380.  
 — *ugandense M. B. Moss*, 125.  
 — *venenatum* (with figs.), 126.  
*Dichrostachys glomerata Hutch. et J. M. Dalz.*, 204, 401.  
*Dicymbe Altsoni Sandwith*, 371.  
 — *Jenmani Sandwith*, 373.  
*Didymocarpus Parryorum Fischer*, 142.  
 — *Wengeri Fischer*, 74.  
*Digitaria verrucosa C. E. Hubbard*, 40.  
*Dioncophyllum Dawei Hutch. et J. M. Dalz.*, 31.  
 — *peltatum Hutch. et J. M. Dalz.*, 31.  
*Dissotis Gilgiana Hutch. et J. M. Dalz.*, 222.  
 — *Lecomteana Hutch. et J. M. Dalz.*, 222.  
 — *leonensis Hutch. et J. M. Dalz.*, 222.  
 — *Pobeguini Hutch. et J. M. Dalz.*, 221.  
 — *rupicola Hutch. et J. M. Dalz.*, 221.  
*Drypetes Aylmeri Hutch. et J. M. Dalz.*, 300.  
 — *ivorensis Hutch. et J. M. Dalz.*, 299.

*Duboscia viridiflora Hutch. et J. M. Dalz.*, 229.

## E.

*Ecastaphyllum Heudelotii Hutch. et J. M. Dalz.*, 403.  
 Edwards, A., 301.  
*Elaeis guineensis*, branching specimen of (with plate), 21.  
*Elichrysium* (spelling of), 113.  
*Elmerrillia mollis Dandy*, 184.  
 — *papuana var. adpressa Dandy*, 185.  
 — — — *glaberrima Dandy*, 185.  
*Entada flexuosa Hutch. et J. M. Dalz.*, 401.  
*Epistephium ellipticum R. O. Williams & Summerhayes*, 145.  
*Eria Cooperi Summerhayes*, 145.  
*Eugenia ciliaris Ridl.*, 74.  
 — *Collinsae Craib*, 237.  
 — *Dawei Hutch. et J. M. Dalz.*, 219.  
 — *nigerina A. Chev.*, 219.  
 — *salacioides Laws. ex Hutch. et J. M. Dalz.*, 219.  
 — *saxitana Ridl.*, 74.  
*Eulophia seychellarum Rolfe*, 393.  
*Euonymus* (spelling of), 294.  
 Evans, F. J. (obit.), 336.  
*Evonymus* (spelling of), 294.

## F.

Faulkner, O. T., 78.  
 Faull, J. H., 254.  
*Ficus sechellarum Summerhayes*, 393.  
 Fischer, C. E. C., *Amomum muricatum* (with figs.), 105.  
 — — and Sprague, T. A.; *Dalzellia* or *Belosynapsis*, 252, 406.  
 Flora, a British Garden, 78.  
 Flora of Burma, contributions to (with figs.), 42, 332.  
 — — Madras, notes on, 281.  
 — — Siam, contributions to, 62, 234.  
 — — West Tropical Africa, 303.  
 Forest Flora of South Central Africa, notes on (with plate and figs.), 193.

## G.

*Gaertnera lushaiensis Fischer*, 141.  
*Gagea kashmirensis Turvill*, 77.  
*Galium petiolatum Geddes*, 246.  
*Garcinia brevipedicellata Hutch. et J. M. Dalz.*, 228.



*Garcinia gnetoides* Hutch. et J. M. Dalz., 227.  
 — *golaensis* Hutch. et J. M. Dalz., 228.  
 — *granulata* Hutch. et J. M. Dalz., 227.  
 — *laurifolia* Hutch. et J. M. Dalz., 228.  
 — *tenuifolia* Ridl., 72.  
 Garden Flora, a British, 78.  
*Gardenia fusca* Geddes, 242.  
 — *magnifica* Geddes, 243.  
 — *saxatilis* Geddes, 243.  
*Garnotia sechellensis* Hubbard & Summerhayes, 394.  
 Gentians, new Asiatic, 49.  
*Gentiana anomala* Marquand, 49.  
 — *burmensis* Marquand, 49.  
 — *chungtienensis* Marquand, 50.  
 — *confertifolia* Marquand, 50.  
 — *damyonensis* Marquand, 51.  
 — *ecaudata* Marquand, 51.  
 — *filistyla* Balf. f. et Forrest, 60.  
 — *Forrestii* Marquand, 52.  
 — *hapalocaula* Marquand, 52.  
 — *helophila* Balf. f. et Forrest, 60.  
 — *muliensis* Marquand, 53.  
 — *nanobella* Marquand, 53.  
 — *praeclara* Marquand, 54.  
 — *pterocalyx* var. *flavo-viridis* Marquand, 54.  
 — *pubigera* Marquand, 59.  
 — *Purdomi* Marquand, 55.  
 — *rhodantha* var. *Wilsoni* Marquand, 55.  
 — *saltuum* Marquand, 55.  
 — *setulifolia* Marquand, 56.  
 — *sichitoensis* Marquand, 56.  
 — *sino-ornata* var. *gloriosa* Marquand, 57.  
 — *stictantha* Marquand, 57.  
 — *stragulata* Balf. f. et Forrest, 61.  
 — *streptopoda* Balf. f. et Forrest, 61.  
 — *suborbisepala* Marquand, 58.  
 — *Trailliana* var. *minima* Marquand, 58.  
 — *trichotoma* var. *albescens* Marquand, 59.  
 — *tsarongensis* Balf. f. et Forrest, 62.  
 — *Wilsoni* Marquand, 59.  
*Geranium brevipes* Hutch. et J. M. Dalz., 30.  
*Gerrardanthus nigericus* Hutch. et J. M. Dalz., 215.  
 Gillett, S., 254.  
 Gladiolus, 48.

*Glyphaea lateriflora* Hutch. et J. M. Dalz., 229.  
 Grasses, African, notes on, 35, 130.  
 — Mitchell (*Astrebula* spp.), 257.  
 — Uganda, 130.  
 Green, M. L., The last issue of the *Journal de Botanique*, 155.  
 Greenway, P. J., 156.  
 — — Notes on Forest Flora of South Central Africa (with plate and figs.) 193.  
*Grewia cissoïdes* Hutch. et J. M. Dalz., 229.  
 Ground-nut cultivation in Central Provinces, India, 160.  
 Guest, E. R., 336.  
*Gymnocladus burmanicus* C. E. Parkinson, 333.

## H.

Handley, C. B. C., 156.  
 Harcourt, F. G., 112.  
 Harvard Botanical Gardens, Cuba, Report of, 160.  
*Hedyotis sessilifolia* Geddes, 241.  
 — *similis* Geddes, 241.  
*Helichrysium* (spelling of), 113.  
 Henriques, J. A. (obit), 301.  
*Heterostemon ingifolius* Sandwith, 375.  
 — *mazarunensis* Sandwith, 374.  
*Hibiscus comoensis* A. Chev., 298.  
 — *Gourmania* Hutch. et J. M. Dalz., 298.  
 Hill, Dr. A. W., 78, 112.  
 — — A new species of *Lilaeopsis* from New Zealand (with fig.), 266.  
 — — New spp. of *Nototriche* from Chile, with notes on *Malvastrum* (with figs.), 17.  
*Hirtella bangweolensis* Greenway, 199.  
 — *eglandulosa* Greenway, 199.  
*Homalium alnifolium* Hutch. et J. M. Dalz., 212.  
 — *Aylmeri* Hutch. et J. M. Dalz., 213.  
 — *crenulatum* Geddes, 238.  
 — *Dalzielii* Hutch., 211.  
 — *djalonenis* A. Chev., 212.  
 — *dolichophyllum* Gilg, 212.  
 — *glabrifolium* Geddes, 238.  
 — *Symthei* Hutch. et J. M. Dalz., 213.  
 — *verruculosum* Craib, 239.  
 Hosking, H. R., 336.

Howes, F. N., The Banana in some Tropical Eastern countries—its forms and variations (with plates), 305.

Hubbard, C. E., The Genus *Astrebula* or Mitchell Grasses, 257.  
—— and Sandwith, N. Y., New plants from Spain, (with figs.), 150.

Hugonia Chevalieri *Hutch. et J. M. Dalz.*, 29.

Hutchinson, J., and Dalziel, J. M., Tropical African Plants, 22, 211, 296, 380, 397.

Hybanthus thesiifolius *Hutch. et J. M. Dalz.*, 26.

Hydnocarpus calvipetala *Craib*, 234.

—— dawnensis *Parkinson et Fischer* (with figs.), 43.

—— verrucosa *Parkinson et Fischer* (with figs.), 42.

Hymenostegia Bakerianum *Hutch. et J. M. Dalz.*, 381.

—— gracilipes *Hutch. et J. M. Dalz.*, 381.

Hyparrhenia Eylesii *C. E. Hubbard*, 37.

—— Pilgeriana *C. E. Hubbard*, 39.

—— Snowdenii *C. E. Hubbard*, 38.

#### I.

Icones Plantarum Sinicarum, 255.

Illingworth, J. L., 156.

Impatiens Putii *Craib*, 235.

India, Ground-nut cultivation in Central Provinces, 160.

Irving, W., 301.

Isoberlinia globiflora *Hutchinson*, 203.

—— paniculata *Hutchinson*, 203.

—— tomentosa *Hutchinson*, 203.

#### J.

Journal de Botanique, the last issue of, 155.

Juel, H. O., 301.

Juncus Ellmanii *Hubbard, Sandwith et Turrill* (with figs.), 153.

#### K.

Kalanchoe tetramera *Geddes*, 67.

Kashmir, Beautiful Flowers of, 80.

—— Wild Flowers of, 80.

Knowles, C. H., 404.

Kosteletzkya stellata *Hutch. et J. M. Dalz.*, 299.

Kraenzlin, F., Notes on New Caledonian Orchids, 34.

#### L.

Lasianthus longisepalus *Geddes*, 245.

Leach, E. W., 383.

Leiphaimos eximia *Sandwith*, 379.

Lilaeopsis, a new species of, from New Zealand (with fig.), 266.

—— orbicularis *A. W. Hill* (with fig.), 267.

Limonium carthaginense *Hubbard et Sandwith*, 150.

—— spathulatum var. emarginatum *Hubbard et Sandwith*, 151.

Line, C. W. J., 383.

Lobelia Eryliae *Fischer*, 141.

#### M.

McCarthy, P. M., 47.

McIntosh, E. S., 78.

Macrocentrum gesneriaceum *Sandwith*, 377.

—— vestitum *Sandwith*, 376.

Macrolobium Aylmeri *Hutch. et J. M. Dalz.*, 399.

—— bilineatum *Hutch. et J. M. Dalz.*, 399.

—— chrysophylloides *Hutch. et J. M. Dalz.*, 400.

—— Dawei *Hutch. et J. M. Dalz.*, 398.

—— Talbotii *Hutch. et J. M. Dalz.*, 399.

Madras, notes on Flora of, 281.

Maesobotrya edulis *Hutch. et J. M. Dalz.*, 299.

Magnolia aequinoctialis *Dandy*, 185.

—— pachyphylla *Dandy*, 186.

—— persuaeolens *Dandy*, 186.

—— pulgarensis *Dandy*, 187.

Magnolieae, Malayan, 183.

Malayan Magnolieae, 183.

Malvastrum coccineum, 21.

—— nubigena, 20.

Manglietia glauca var. lanuginosa *Dandy*, 187.

—— ——— sumatrana *Dandy*, 188.

Marica and Neomarica, 278.

Marquand, C. V. B., New Asiatic Gentians, 49.

Marquesia macroura (with plate), 195.

Marsden-Jones, E. M., and Turrill, W. B., Researches on *Silene maritima* and *S. vulgaris* (with figs.), 1.

Marsland, H., 156.

Martyn, E. E., 383.

Medicago from China, new (with fig.), 270.

—— archiducis-Nicolai *Širjaev* (with fig.), 270.

*Melochia mollis* Hutch. et J. M. Dalz., 297.  
*Melothria fernandensis* Hutch. et J. M. Dalz., 215.  
*Memecylon Aylmeri* Hutch. et J. M. Dalz., 223.  
 — *Bakerianum* Hutch. et J. M. Dalz., 222.  
 — *Dinklagei* Gilg ex Hutch. et J. M. Dalz., 223.  
 — *Fosteri* Hutch. et J. M. Dalz., 223.  
 — *viride* Hutch. et J. M. Dalz., 223.  
*Menonvillea Comberi* Sandwith, 108.  
*Mesembryanthemum* (spelling of), 113.  
*Michelia sumatrae* Dandy, 188.  
*Miconia* and *Myconia*, 268.  
*Milletia Irvinei* Hutch. et J. M. Dalz., 404.  
 — *pilosa* Hutch. et J. M. Dalz., 403.  
*Miscanthidium erectum* Stent et Hubbard (with figs.), 36.  
 Miscellaneous Notes, 47, 78, 112, 156, 254, 301, 336, 383, 404.  
 Mitchell Grasses, 257.  
*Mollugo Chevalieri* Hutch. et J. M. Dalz., 27.  
*Momordica bracteata* Hutch. et J. M. Dalz., 215.  
*Monopetalanthus emarginatus* Hutch. et J. M. Dalz., 397.  
 — *compactus* Hutch. ex Lane-Poole, 397.  
 Moreau, R. E., 156.  
 Moss, M. B., The Genus *Dichapetalum* in East, South Tropical, and Sub-tropical Africa (with figs.), 115.  
 Musk, H., 112.  
*Mussaenda Parryorum* Fischer, 274.  
 — *pentasemia* Fischer, 275.  
*Mycetia*, 253.  
*Myconella* Sprague, nom. nov. 269.  
 — *Myconis* T. A. Sprague, 269.  
*Myconia* and *Miconia*, 268.

## N.

*Napoleona leonensis* Hutch. et J. M. Dalz., 220.  
 — *lutea* Bak. f. ex Hutch. et J. M. Dalz., 220.  
 — *reptans* Bak. f. ex Hutch. et J. M. Dalz., 220.  
*Nasturtium benuense* Hutch. et J. M. Dalz., 26.

Nauen, J. C., 254.  
*Neomarica* and *Marica*, 278.  
*Neomarica Sprague*, nom. nov. 280.  
 — *brachypus* Sprague, 280.  
 — *bulbosa* Sprague, 281.  
 — *caerulea* Sprague, 280.  
 — *candida* Sprague, 281.  
 — *glaucia* Sprague, 280.  
 — *gracilis* Sprague, 280.  
 — *imbricata* Sprague, 281.  
 — *longifolia* Sprague, 280.  
 — *lutea* Sprague, 281.  
 — *Martii* Sprague, 281.  
 — *Northiana* Sprague, 280.  
 — — var. *undulata* Sprague, 280.  
 — *occidentalis* Sprague, 281.  
 — *vittata* Sprague, 281.  
 — *Warmingii* Sprague, 280.  
*Neowormia Hutchinsoni* et Summerhayes, gen. nov., 388.  
 — *ferruginea* Hutch. et Summerhayes, 388.  
 New Caledonian Orchids, notes on, 34.  
 New Zealand, new sp. of *Lilaeopsis* from (with fig.), 266.  
 — — Plant Research Institute, 302.  
 — — Trees and Shrubs, 406.  
 Nicholl, Capt. E. M., 156.  
 Nomenclature of "Bromus," 209.  
*Nototriche* from Chile, new spp. of (with figs.), 17.  
 — *nana* A. W. Hill (with fig.), 19.  
 — *pulvinata* A. W. Hill (with fig.), 18.  
 — *sarmentosa* A. W. Hill (with fig.), 20.  
 Nutman, F. J., 112.

## O.

Obituary Notices :—  
 Curtis, Charles, 383.  
 Evans, F. J., 336.  
 Henriques, J. A., 301.  
 Riley, L. A. M., 157.  
 Rose, J. N., 302.  
 Wallis, E. J., 254.  
 Wickham, Sir H. A., 383.  
*Ochna elegans* Hutch. et J. M. Dalz., 216.  
 — *kibbiensis* Hutch. et J. M. Dalz., 216.  
 — *Smythi* Hutch. et J. M. Dalz., 216.  
*Ochthocosmus Chippii* Sprague et Hutch., 29.



- Oil Palm, African, branching in (with plate), 21.  
 ——— cover crops for, 179.  
 Oldenlandia goreensis *Summerhayes*, 392.  
 ——— rosettifolia *Geddes*, 242.  
 Oliver, W. R. B., 404.  
 Orchids, New Caledonian, notes on, 34.  
 Oreocnide versus Villebrunea, 395.  
 Osbeckia parva *Geddes*, 70.  
 ——— setoso-annulata *Geddes*, 71.  
 Ouratea ambacensis *Hutch. et J. M. Dalz.*, 218.  
 ——— amplexans *Hutch. et J. M. Dalz.*, 217.  
 ——— Barteri *Hutch. et J. M. Dalz.*, 218.  
 ——— calophylloides *Hutch. et J. M. Dalz.*, 218.  
 ——— Cameronii *Hutch. et J. M. Dalz.*, 217.  
 ——— Morsonii *Hutch. et J. M. Dalz.*, 217.  
 ——— subcordata *Hutch. et J. M. Dalz.*, 217.  
 ——— Turneræ *Hutch. et J. M. Dalz.*, 217.  
 Oxalis Comberi *R. Knuth*, 109.

#### P.

- Paddy in Ceylon, 405.  
 Palmer, J. H., 383.  
 Panicum Cooperi *C. E. Hubbard*, 147.  
 ——— Snowdenii *C. E. Hubbard*, 132.  
 Pararistolochia *Hutch. et J. M. Dalz.*, gen. nov., 23.  
 ——— cereopegioides *Hutch. et J. M. Dalz.*, 24.  
 ——— Flos-avis *Hutch. et J. M. Dalz.*, 24.  
 ——— Goldieana *Hutch. et J. M. Dalz.*, 25.  
 ——— ju-ju *Hutch. et J. M. Dalz.*, 23.  
 ——— leonensis *Hutch. et J. M. Dalz.*, 24.  
 ——— Preussii *Hutch. et J. M. Dalz.*, 24.  
 ——— Schweinfurthii *Hutch. et J. M. Dalz.*, 24.  
 ——— Soyauxiana *Hutch. et J. M. Dalz.*, 23.  
 ——— Staudtii *Hutch. et J. M. Dalz.*, 24.  
 ——— triactina *Hutch. et J. M. Dalz.*, 24.  
 ——— tribrachiata *Hutch. et J. M. Dalz.*, 24.

- Pararistolochia Zenkeri *Hutch. et J. M. Dalz.*, 24.  
 Paspalum scrobiculatum var. Deightonii *C. E. Hubbard*, 40.  
 Pelargonium hemicyclicum *Hutch. et C. A. Smith*, 272.  
 Pennisetum Snowdenii *C. E. Hubbard*, 133.  
 Peru, discovery of the genus Cooperia in (with fig.), 385.  
 Phacelurus caespitosus *C. E. Hubbard*, 35.  
 Phaeoneuron gracile *Hutch. et J. M. Dalz.*, 220.  
 Physedra eglandulosa *Hutch. et J. M. Dalz.*, 216.  
 Pioneers of Plant Study, 304.  
 Pittosporum Dalzielii *Hutch.*, 30.  
 Polyosma elongata *Geddes*, 66.  
 ——— odorans *Geddes*, 67.  
 Protium Altsoni *Sandwith*, 369.  
 Prunella (spelling of), 292.  
 Psorospermum Thompsonii *Hutch. et J. M. Dalz.*, 226.  
 ——— umbellulatum *Hutch. et J. M. Dalz.*, 226.  
 Psychotria sechellarum *Summerhayes*, 392.

#### R.

- Rats, Setaria verticillata as preventive of, 384.  
 Rhaphidiocystis Caillei *Hutch. et J. M. Dalz.*, 215.  
 Rhinopteryx Kerstingii *Hutch. et J. M. Dalz.*, 299.  
 Rhodomyrtus parvifolia *Craib*, 70.  
 Ridley, H. N., presentation of Frank N. Meyer Medal, 158.  
 Riley, L. A. M. (obit.), 157.  
 Rinorea djalonenensis *A. Chev.*, 26.  
 Ritchiea obanensis *Hutch. et J. M. Dalz.*, 25.  
 Rose, J. N. (obit.), 302.  
 Rounce, N. V., 336.  
 Rubber, cover crops for, 176.  
 Ruprechtia exploratricis *Sandwith*, 143.

#### S.

- Sampson, H. C., Cover crops in tropical plantations, 161.  
 Sandwith, N. Y., New spp. from the Andes of Argentina, 107.  
 ——— ——— New spp. from British Guiana, 365.  
 ——— ——— and Hubbard, C.E., New plants from Spain (with figs.), 150.

- Sapodilla Plum, 302.  
 Saraca Pierreana *Craib*, 64.  
 Savile, A. H., 336.  
 Scaphopetalum amoenum *A. Chev.*, 296.  
 Schizoglossum divaricatum *N. E. Br.*, 275.  
 — hirtiflorum *N. E. Br.*, 276.  
 Schoenus xipholepis *Summerhayes*, 394.  
 Scott, Dr. D. H., 78.  
 Scottellia coriacea *A. Chev.*, 31.  
 Scutia buxifolia *Hutch. et M. B. Moss*, 272.  
 Scyttopetalum Tieghemii *Hutch. et J. M. Dalz.*, 228.  
 Septina and Camphorina, 41.  
 Setaria glauca and *S. lutescens*, 147.  
 — verticillata as preventive of Rats, 384.  
 Seychelles, new plants from, 388.  
 Shaw, H. K. A., and Turrill, W. B., *Asperulae Australienses*, 81.  
 Shrubs, 47.  
 Siam, contributions to Flora of, 62, 234.  
 Silene maritima and *S. vulgaris*, researches on (with figs.), 1.  
 Sindora fusca *Craib*, 65.  
 Sipanea micrantha *Sandwith*, 378.  
 Širjaev, G., A new *Medicago* from China (with fig.), 270.  
 Sisal, cover crops for, 179.  
 Skidmore, C. L., 404.  
 Smart, H. P., 383.  
 Smith, C. A., 157.  
 Smythea lanceata *Summerhayes*, 389.  
 Solanum Sanitwongsei *Craib*, 246.  
 Sonerila gracilis *Geddes*, 71.  
 — parva *Geddes*, 72.  
 South Africa, Journal of Botanical Society of, 159.  
 Soyauxia velutina *Hutch. et J. M. Dalz.*, 214.  
 Spains, new plants from (with figs.) 150.  
 Spatholobus pallidus *Craib* 62.  
 Spelling of certain generic names, correct, 113, 285, 337.  
 Spiranthera guianensis *Sandwith*, 368.  
 Sprague, T. A., Camphorina and Septina, 41.  
 — — Discovery of the genus Cooperia in Peru (with fig.), 385.  
 — — Diacrodon, a new genus of Rubiaceae from Brazil, 32.  
 Sprague, T. A., Marica and Neomarica, 278.  
 — — The Generic names Miconia and Myconia, 268.  
 — — The Orchid-flowered Butterworts, 230.  
 — — Oreocnide versus Villebrunea, 395.  
 — — The correct spelling of certain generic names, 113, 285, 337.  
 — — and Fischer, C. E. C., Dalzellia or Belosynapsis, 252, 406.  
 Squire, I. G. C., 254.  
 Stapf, O., Nomenclature of "Bromus," 209.  
 — — Setaria glauca and *S. lutescens*, 147.  
 Sterculia elegantiflora *Hutch. et J. M. Dalz.*, 297.  
 — guianensis *Sandwith*, 367.  
 — Thompsonii *Hutch. et J. M. Dalz.*, 297.  
 Storey, H. H., 47.  
 Strobilanthes Parryorum *Fischer*, 142.  
 Summerhayes, V. S., New plants from the Seychelles, 388.  
 Sunman, W. O., 112.  
 Svedelius, N. E., 301.  
 Symphonia gabonensis var. macrantha *Hutch. et J. M. Dalz.*, 227.  
 Syzygium mumbwaense *Greenway*, 196.  
 T.  
 Talauma athliantha *Dandy*, 189.  
 — gitingensis var. glabra *Dandy*, 189.  
 — — rotundata *Dandy*, 190.  
 — gracilior *Dandy*, 190.  
 — intonsa *Dandy*, 191.  
 — levissima *Dandy*, 191.  
 — peninsularis *Dandy*, 192.  
 — soembensis *Dandy*, 193.  
 Talbotiella Gentii *Hutch. et Greenway*, 382.  
 Tarennia sechellensis *Summerhayes*, 392.  
 Tea, cover crops for, 165.  
 Tempany, H. A., 301.  
 Tephrosia djalonica *A. Chev.*, 404.  
 Terminalia glaucifolia *Craib*, 68.  
 — oryzetorum *Craib*, 69.  
 Terniola, 253.  
 Tessmannia baikieaoides *Hutch. et J. M. Dalz.*, 382.

- Tetracarpidium conophorum* *Hutch. et J. M. Dalz.*, 300.
- Teucrium almeriense* *Hubbard et Sandwith*, 152.
- *Ellmanii* *Hubbard et Sandwith*, 151.
- Thorns, F. W., 301.
- Timonius sechellensis* *Summerhayes*, 391.
- Toms, K. E., 78.
- Trees, Ornamental, care of, 304.
- and Shrubs, New Zealand, 406.
- Trigonostemon arboreus* *Ridl.*, 75.
- Trinidad and Tobago, Plants of, 48.
- Trisepalum lineicapsa* *Fischer* (with figs.), 276.
- Triumfetta longicornuta* *Hutch. et M. B. Moss*, 272.
- Turnbull, G. N. K., 383.
- Turner, E. Phillips, 336.
- Turrill, W. B., and Marsden-Jones, E. M., *Researches on Silene maritima* and *S. vulgaris* (with figs.), 1.
- — and Shaw, H. K. A., *Asperulae Australienses*, 81.
- U.
- Uganda Grasses, 130.
- Uncaria quadrangularis* *Geddes*, 240.
- V.
- Valeriana chionophila* *Sandwith*, 110.
- Venidium fastuosum*, 112.
- Villebrunea* or *Oreocnide*, 395.
- Viola*, new Chinese spp. of, 247.
- *Comberi* *W. Bckr.*, 136.
- *confusa*, on the type specimen of, 383.
- Viola coronifera* *W. Bckr.*, 137.
- — var. *minoriflora* *W. Bckr.*, 137.
- *Cotyledon* subsp. *lologensis* *W. Bckr.*, 135.
- *dasyphylla* *W. Bckr.*, 135.
- *diffusa* var. *brevisepala* *W. Bckr.*, 251.
- *Duclouxii* *W. Bckr.*, 249.
- *escondidaensis* *W. Bckr.*, 138.
- *gan-chouenensis* *W. Bckr.*, 251.
- *grandisepala* *W. Bckr.*, 250.
- *Hancockii* *W. Bckr.*, 249.
- *Hillii* *W. Bckr.*, 134.
- *lucens* *W. Bckr.*, 250.
- *Monbeigii* *W. Bckr.*, 248.
- *petraea* f. *albida* *W. Bckr.*, 136.
- *Pricei* *W. Bckr.*, 252.
- *pulla* *W. Bckr.*, 250.
- *rupestris* subsp. *Licentii* *W. Bckr.*, 248.
- *serrula* *W. Bckr.*, 247.
- *squamulosa* *W. Bckr.*, 138.
- *tectiflora* *W. Bckr.*, 139.
- *Wilsonii* *W. Bckr.*, 251.
- *yunnanfuensis* *W. Bckr.*, 248.
- Violets from the Andes, 133.
- Vismia leonensis* var. *macrophylla* *Hutch. et J. M. Dalz.*, 227.
- Voelcker, O. J., 383.
- W.
- Walford, A. S., 254.
- Wallace, J. W., 112.
- Wallis, E. J. (obit.), 254.
- Ward, J. F., 47.
- Wickham, Sir H. A. (obit.), 383.
- Williams, T. L., 47.
- Z.
- Zeuxine Blatteri* *Fischer*, 76.